

Specifications and Contract  
Documents

for the

Penitencia Water Treatment Plant  
Landscaping and Site Improvement  
Project

Project No. 93234037

Santa Clara Valley Water District



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SPECIFICATIONS AND CONTRACT DOCUMENTS

FOR THE  
LANDSCAPE AND SITE IMPROVEMENTS  
PENITENCIA WATER TREATMENT PLANT  
PROJECT NO. 93234037

SANTA CLARA VALLEY WATER DISTRICT  
LIBRARY  
8750 ALMADEN EXPRESSWAY  
SAN JOSE, CALIFORNIA 95118

Santa Clara Valley Water District



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July 2006

DISTRICT BOARD OF DIRECTORS

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## TABLE OF CONTENTS

---

|   | Page |
|---|------|
| BID DOCUMENTS   |      |
| STANDARD PROVISIONS   |      |
| SECTION 1. DEFINITIONS .....  | 1-1  |
| SECTION 2. INTERPRETATION OF CONTRACT .....                                   | 2-1  |
| 2.01. Precedence of Contract .....  | 2-1  |
| 2.02. Clarification of Contract .....   | 2-1  |
| 2.03. State Specifications .....  | 2-1  |
| SECTION 3. PROPOSAL REQUIREMENTS AND CONDITIONS .....                         | 3-1  |
| 3.01. Approximate Estimate .....  | 3-1  |
| 3.02. Examination of Drawings, Specifications, and Site of Work .....         | 3-1  |
| 3.03. Proposal Form .....   | 3-1  |
| 3.04. Queries on Bidding .....  | 3-2  |
| 3.05. Rejection of Proposals .....  | 3-2  |
| 3.06. Proposal Guaranty .....   | 3-3  |
| 3.07. Withdrawal of Proposals .....   | 3-3  |
| 3.08. Joint Proposals .....   | 3-3  |
| 3.09. Disqualification of Bidders .....                                       | 3-3  |
| 3.10. Addendum and Clarification .....  | 3-3  |
| 3.11. Guaranty .....  | 3-4  |
| 3.12. Post Bid Opening Protest .....  | 3-4  |
| SECTION 4. AWARD OF CONTRACT .....  | 4-1  |
| 4.01. Award of Contract .....   | 4-1  |
| 4.02. Return of Proposal Guarantees .....                                     | 4-1  |
| 4.03. Contract Bonds .....  | 4-1  |
| 4.04. Execution of Contract .....   | 4-1  |
| 4.05. Failure to Execute Contract .....                                       | 4-1  |
| SECTION 5. SCOPE OF WORK .....  | 5-1  |
| 5.01. Work to be Done .....   | 5-1  |
| 5.02. Final Cleanup .....   | 5-1  |
| 5.03. Change in Work .....  | 5-1  |
| 5.03.01. Allowable Quantity Variations .....                                  | 5-2  |
| 5.04. Change in Contract Price .....  | 5-3  |
| 5.04.01. General .....  | 5-3  |
| 5.04.02. Cost of Work (Based on Time and Materials) .....                     | 5-4  |
| 5.04.03. Special Services .....   | 5-7  |
| 5.04.04. Contractor's Fee .....   | 5-8  |
| 5.04.05. Compensation for Time Extensions .....                               | 5-9  |
| 5.05. Change of Contract Time .....   | 5-9  |
| 5.05.01. General .....  | 5-9  |
| 5.05.02. Extensions of Time for Delay Due to Excusable Inclement Weather..... | 5-10 |

|            |  |      |
|------------|--|------|
| 5.06.      | Changed Site Conditions .....  | 5-11 |
| 5.07.      | Cost Reduction Incentive .....   | 5-11 |
| 5.08.      | Protests .....   | 5-12 |
| 5.09.      | Claims .....   | 5-12 |
| 5.09.01.   | Claims Less Than Fifty Thousand Dollars .....  | 5-12 |
| 5.09.02.   | Claims From Fifty Thousand Dollars to Three Hundred and<br>Seventy-Five Thousand Dollars ..... | 5-13 |
| 5.09.03.   | Informal Conferences .....   | 5-13 |
| 5.09.04.   | Civil Actions .....  | 5-13 |
| 5.10.      | Dust Control .....   | 5-14 |
| 5.11.      | Excavation Safety Plans .....  | 5-14 |
| 5.12.      | Asbestos-Related Work .....  | 5-15 |
| 5.13.      | Substitutions .....  | 5-15 |
| SECTION 6. | LEGAL RELATIONS AND RESPONSIBILITY .....   | 6-1  |
| 6.01.      | Laws to be Observed .....  | 6-1  |
| 6.02.      | Labor Discrimination .....   | 6-1  |
| 6.03.      | Employment of Labor .....  | 6-1  |
| 6.04.      | Prevailing Wages .....   | 6-1  |
| 6.05.      | Hours of Labor .....   | 6-2  |
| 6.06.      | Apprentices .....  | 6-3  |
| 6.07.      | Permits and Licenses .....   | 6-4  |
| 6.08.      | Patents and Copyrights .....   | 6-4  |
| 6.09.      | Public Safety .....  | 6-4  |
| 6.10.      | Accident Prevention .....  | 6-4  |
| 6.11.      | Explosives and Stream Pollution .....  | 6-5  |
| 6.12.      | Fires .....  | 6-5  |
| 6.13.      | Interference With Fire Hydrants, Highways, and Fences .....                                    | 6-5  |
| 6.14.      | Preservation of Property .....   | 6-5  |
| 6.15.      | Contractor's Responsibility for Work .....   | 6-6  |
| 6.16.      | Indemnification .....  | 6-6  |
| 6.17.      | Contractor's Insurance .....   | 6-6  |
| 6.17.01.   | General .....  | 6-6  |
| 6.17.02.   | Worker's Compensation and Liability Insurance .....  | 6-7  |
| 6.17.03.   | Insurance on Work and Materials .....  | 6-7  |
| 6.17.04.   | Certificates of Insurance .....  | 6-8  |
| 6.18.      | Payment of Taxes .....   | 6-8  |
| 6.19.      | Cooperation With Others .....  | 6-8  |
| 6.20.      | Property Rights in Materials .....   | 6-9  |
| 6.21.      | Rights in Land and Improvements .....  | 6-9  |
| 6.22.      | Title to Materials Found on the Work .....   | 6-9  |
| 6.23.      | Trespass .....   | 6-9  |
| 6.24.      | Subcontracting .....   | 6-9  |
| 6.25.      | Tunnel Construction Safety .....   | 6-10 |
| 6.26.      | Burial Sites .....   | 6-10 |
| 6.27.      | Assignment of Antitrust Claims .....   | 6-10 |
| 6.28.      | Delay Due to Archeological Discovery .....   | 6-10 |
| SECTION 7. | PROSECUTION AND PROGRESS OF WORK .....   | 7-1  |
| 7.01.      | Assignment .....   | 7-1  |
| 7.02.      | Notice to Begin Work .....   | 7-1  |



|                    |   |      |
|--------------------|---|------|
| 7.03.              | Commencement of Work .....                              | 7-1  |
| 7.04.              | Work Progress Schedule .....                            | 7-1  |
| 7.05.              | Temporary Suspension of Work .....                      | 7-2  |
| 7.06.              | Liquidated Damages .....                                | 7-2  |
| 7.07.              | Termination of Control .....                            | 7-2  |
| 7.08.              | Termination of Contract .....                           | 7-2  |
| 7.09.              | Contractor's Cost Data .....                            | 7-3  |
| 7.10.              | Coordination With Utilities .....                       | 7-3  |
| SECTION 8.         | MEASUREMENT AND PAYMENT .....                           | 8-1  |
| 8.01.              | Measurement of Quantities .....                         | 8-1  |
| 8.02.              | Deductions From Payments .....                          | 8-1  |
| 8.03.              | Partial Payment .....                                   | 8-1  |
| 8.04.              | Final Payment .....                                     | 8-3  |
| 8.05.              | Scope of Payment .....                                  | 8-3  |
| 8.06.              | Acceptance of Final Payment Constitutes Releases .....  | 8-3  |
| SECTION 9.         | CONTROL OF WORK .....                                   | 9-1  |
| 9.01.              | Authority of Engineer .....                             | 9-1  |
| 9.02.              | Submittals to be Furnished by the Contractor .....      | 9-1  |
| 9.03.              | Drawings and Data to be Furnished by the District ..... | 9-2  |
| 9.04.              | Superintendence .....                                   | 9-2  |
| 9.05.              | Character of Workers .....                              | 9-2  |
| 9.06.              | Layout of Work and Surveys .....                        | 9-2  |
| 9.07.              | Inspection .....  | 9-3  |
| 9.08.              | Defective and Unauthorized Works .....                  | 9-4  |
| 9.09.              | Construction Equipment and Plant .....                  | 9-4  |
| 9.10.              | Final Inspection and Acceptance of Work .....           | 9-4  |
| 9.11.              | Use Prior to Acceptance .....                           | 9-4  |
| SECTION 10.        | CONTROL OF MATERIALS AND INSTALLED EQUIPMENT .....      | 10-1 |
| 10.01.             | Furnishing and Quality of Materials and Equipment ..... | 10-1 |
| 10.02.             | Source of Materials and Equipment .....                 | 10-1 |
| 10.03.             | Product Data and Samples .....                          | 10-1 |
| 10.04.             | Storage of Materials and Equipment .....                | 10-1 |
| 10.05.             | Defective Materials .....                               | 10-2 |
| 10.06.             | Trade Names and Alternatives .....                      | 10-2 |
| 10.07.             | Testing Materials .....                                 | 10-2 |
| 10.08.             | Plant Inspection .....                                  | 10-3 |
| 10.09.             | District-Furnished Materials .....                      | 10-3 |
| SECTION 11.        | DELETED .....   | 11-1 |
| SPECIAL PROVISIONS |   |      |
| SECTION 12.        | SCHEDULE OF WORK .....                                  | 12-1 |
| 12.01.             | Time of Work .....                                      | 12-1 |
| 12.01.01.          | Excusable Inclement Weather Delays .....                | 12-1 |
| 12.01.02.          | Inspection and Acceptance of Work .....                 | 12-1 |
| 12.02.             | Schedule of Work .....                                  | 12-1 |
| 12.02.01.          | Preliminary Schedule of Work .....                      | 12-1 |

|                    |  |             |
|--------------------|--|-------------|
| 12.02.02.          | Schedule of Work – CPM Schedule .....                              | 12-1        |
| 12.02.03.          | Schedule Updates .....   | 12-2        |
| 12.02.04.          | Adjustments to Schedule .....                                      | 12-3        |
| 12.02.05.          | Payment .....  | 12-3        |
| 12.03.             | Schedule of Submittals .....                                       | 12-4        |
| 12.04.             | Liquidated Damages .....   | 14-4        |
| 12.05.             | Hours of Work .....  | 12-4        |
| 12.05.01.          | Truck Arriving Early and Truck Idling .....                        | 12-5        |
| 12.05.02.          | Liquidated Damages for Truck Idling and Truck Arriving Early ..... | 12-6        |
| 12.06.             | Weekly Coordination Meetings.....                                  | 12-6        |
| <b>SECTION 13.</b> | <b>SPECIAL REQUIREMENTS .....</b>                                  | <b>13-1</b> |
| 13.01.             | Designated Engineer .....  | 13-1        |
| 13.02.             | Office Facilities .....  | 13-1        |
| 13.03.             | Project Signs .....  | 13-1        |
| 13.04.             | Safety .....   | 13-1        |
| 13.05.             | Parking .....  | 13-2        |
| 13.06.             | Traffic Control Measures .....                                     | 13-2        |
| 13.07.             | District-Furnished Materials .....                                 | 13-3        |
| 13.08.             | Materials and Equipment Guaranty .....                             | 13-3        |
| 13.09.             | Price Submittal .....  | 13-4        |
| 13.10.             | Survey Monuments .....   | 13-4        |
| 13.11.             | Drawings .....   | 13-5        |
| 13.11.01.          | Record Drawings .....  | 13-5        |
| 13.12.             | Insurance .....  | 13-5        |
| 13.12.01.          | Liability Insurance Limits .....                                   | 13-5        |
| 13.12.02.          | Additional Insured / Indemnification .....                         | 13-6        |
| 13.13.             | State Specifications and State Standard Plans .....                | 13-6        |
| 13.14.             | Property Surveys .....   | 13-6        |
| 13.15.             | Wildlife Protection .....  | 13-7        |
| 13.15.01.          | Migratory Birds .....  | 13-7        |
| 13.16.             | Violation of Good Neighbor Control Measures .....                  | 13-12       |
| 13.17.             | Subcontracting .....   | 13-13       |
| 13.18.             | Payment .....  | 13-13       |
| <b>SECTION 14.</b> | <b>COORDINATION AND REPORTS .....</b>                              | <b>14-1</b> |
| 14.01.             | Existing Utilities .....   | 14-1        |
| 14.02.             | Rights of Way .....  | 14-2        |
| 14.02.01.          | District-Furnished Right of Way .....                              | 14-2        |
| 14.02.02.          | Contractor-Furnished Right of Way .....                            | 14-2        |
| 14.02.03.          | Access to Properties .....   | 14-2        |
| 14.03.             | Permits and Agreements .....                                       | 14-2        |
| 14.04.             | Access for the Jobsite .....                                       | 14-3        |
| 14.05.             | District-Furnished Reports .....                                   | 14-3        |
| 14.06.             | Construction by Others .....                                       | 14-3        |
| 14.07.             | Discovery of Archeological Artifacts and Human Remains .....       | 14-4        |
| 14.08.             | Surveys .....  | 14-4        |
| 14.09.             | Public Notification .....  | 14-5        |
| 14.10.             | Security Requirements at Jobsite .....                             | 14-5        |
| 14.10.01.          | General .....  | 14-5        |
| 14.10.02.          | Identification and Badges .....                                    | 14-6        |

|             |   |       |
|-------------|---|-------|
| 14.10.03.   | Background Checks .....   | 14-7  |
| 14.10.04.   | Site Access Control .....   | 14-7  |
| 14.10.05.   | Mail and Postal Deliveries to the Project Site .....                | 14-8  |
| 14.10.06.   | Productivity Lost for Non-Compliance with Security Measures .....   | 14-9  |
| 14.10.07.   | Payment .....   | 14-9  |
| SECTION 15. | POLLUTION CONTROL .....   | 15-1  |
| 15.01.      | Water .....   | 15-1  |
| 15.02.      | Noise Pollution and Vibration .....                                 | 15-1  |
| 15.02.01.   | Noise .....   | 15-1  |
| 15.02.02.   | Vibration .....   | 15-3  |
| 15.03.      | Air Pollution .....   | 15-6  |
| 15.04.      | Spillage and Dust .....   | 15-7  |
| 15.04.01.   | Spillage and Dust Nuisance .....                                    | 15-8  |
| 15.05.      | Soil Contamination .....  | 15-8  |
| 15.06.      | Storage of Regulated Materials .....                                | 15-8  |
| 15.07.      | Imported Earthfill Material .....                                   | 15-9  |
| 15.08.      | Regulated Material Discharges or Releases .....                     | 15-9  |
| 15.09.      | Serpentine Soils with Naturally Occurring Asbestos .....            | 15-10 |
| 15.09.01.   | Site Health and Safety Plan .....                                   | 15-10 |
| 15.09.02.   | Asbestos Dust Mitigation Plan .....                                 | 15-10 |
| 15.09.03.   | Management of Natural-Occurring Asbestos Containing Materials ..... | 15-11 |
| 15.09.04.   | Payment .....   | 15-11 |
| 15.10.      | Site Maintenance and Cleanup .....                                  | 15-11 |
| 15.11.      | Payment .....   | 15-11 |
| SECTION 16. | STORM WATER POLLUTION PREVENTION .....                              | 16-1  |
| 16.01.      | Compliance with NPDES General Permit .....                          | 16-1  |
| 16.01.01.   | General .....   | 16-1  |
| 16.01.02.   | Storm Water Pollution Prevention Plan (SWPPP) .....                 | 16-1  |
| 16.01.03.   | Implementation of Storm Water Pollution Prevention Measures .....   | 16-2  |
| 16.01.04.   | Monitoring and Reporting .....                                      | 16-5  |
| 16.01.05.   | Regulatory Fines .....  | 16-6  |
| 16.01.06.   | Stormwater Pollution Nuisance .....                                 | 16-6  |
| 16.01.07.   | Payment .....   | 16-6  |
| SECTION 17. | EXTRA WORK .....  | 17-1  |
| 17.01.      | Extra Work As Directed by the Engineer .....                        | 17-1  |

## TECHNICAL PROVISIONS

|             |   |         |
|-------------|---|---------|
| 00001       | INDEX OF DRAWINGS                                     |         |
| DIVISION 2. | SITE WORK   |         |
| 02170       | Environmental Management of Excavated Materials ..... | 02170-1 |
| 02221       | Tree Protection .....                                 | 02221-1 |
| 02230       | Demolition, Site Clearing & Mobilization .....        | 02230-1 |
| 02315       | Excavating, Backfilling, Compacting and Grading ..... | 02315-1 |
| 02740       | Asphalt Concrete Paving .....                         | 12740-1 |
| 02753       | Concrete Finishes .....                               | 02753-1 |
| 02810       | Irrigation System .....                               | 02810-1 |

|              |   |         |
|--------------|---|---------|
| 02823        | Landscape Metal Screen .....                      | 02823-1 |
| 02825        | Ornamental Steel Fence System, Industrial .....   | 02825-1 |
| 02826        | Ornamental Steel Fence, Entry Gate Operator ..... | 02826-1 |
| 02827        | Low Rail Fence .....                              | 02827-1 |
| 02900        | Landscape Planting .....                          | 02900-1 |
| 02940        | Hydro-Seeding .....                               | 02940-1 |
| DIVISION 3.  | CONCRETE  |         |
| 03100        | Concrete Formwork .....                           | 03100-1 |
| 03150        | Concrete Accessories .....                        | 03150-1 |
| 03200        | Concrete Reinforcement .....                      | 03200-1 |
| 03310        | Cast-in-Place Concrete .....                      | 03310-1 |
| 03390        | Concrete Curing .....                             | 03390-1 |
| DIVISION 4.  | MASONRY   |         |
| 04060        | Mortar and Grout .....                            | 04060-1 |
| 04090        | Masonry Accessories .....                         | 04090-1 |
| 04220        | Concrete Masonry Units .....                      | 04220-1 |
| 04820        | Reinforced Unit Masonry System .....              | 04820-1 |
| DIVISION 5.  | METAL   |         |
| 05120        | Structural Steel .....                            | 05120-1 |
| 05270        | Miscellaneous Metals .....                        | 05270-1 |
| 05400        | Cold Formed Metal Framing .....                   | 05400-1 |
| 05500        | Metal Fabrications .....                          | 05500-1 |
| DIVISION 6.  | WOOD & PLASTICS                                   |         |
| NOT USED     |   |         |
| DIVISION 7.  | ROOFING   |         |
| 07190        | Water Repellents .....                            | 07190-1 |
| 07420        | Preformed Metal Panels .....                      | 07420-1 |
| DIVISION 8.  | DOOR & WINDOWS                                    |         |
| NOT USED     |   |         |
| DIVISION 9.  | FINISHES  |         |
| NOT USED     |   |         |
| DIVISION 10. | SPECIALTIES                                       |         |
| NOT USED     |   |         |
| DIVISION 11. | EQUIPMENT   |         |
| NOT USED     |   |         |
| DIVISION 12. | DOOR & WINDOWS                                    |         |
| NOT USED     |   |         |
| DIVISION 13. | SPECIAL CONSTRUCTION                              |         |
| 13126        | Prefabricated Guard House .....                   | 13126-1 |

DIVISION 14.        CONVEYING SYSTEMS  
                     NOT USED

DIVISION 15.        MECHANICAL  
                     NOT USED

DIVISION 16.        ELECTRICAL

|       |   |         |
|-------|---|---------|
| 16010 | Basic Electrical Requirements .....                 | 16010-1 |
| 16050 | Basic Electrical Materials and Methods .....        | 16050-1 |
| 16060 | Minor Electrical Demolition .....                   | 16060-1 |
| 16130 | Raceways and Boxes .....                            | 16130-1 |
| 16140 | Wiring Devices .....                                | 16140-1 |
| 16530 | Site Lighting .....                                 | 16530-1 |
| 16744 | Telephone Distribution Systems, Outside Plant ..... | 16744-1 |

ATTACHMENT A - AGREEMENT

ATTACHMENT B - PAYMENT BOND FOR PUBLIC WORKS

ATTACHMENT C - PARKING AND STAGING PLAN

ATTACHMENT D - SOIL TESTING REPORT

APPENDIX A  
City Permit / NPDES General Permit / BMPs

APPENDIX B  
BAAQMD Regulations for Soil Excavation, Reuse & Disposal

APPENDIX C  
Migratory Bird Permit Memorandum

APPENDIX D  
Requirements for Contractor Biologist

APPENDIX E  
Stormwater Best Management Practice Fact Sheets

## **STANDARD PROVISIONS**

# STANDARD PROVISIONS

## SECTION 1. DEFINITIONS

---

Whenever in these Specifications and other Contract documents the following abbreviations and terms or pronouns in place of them are used, the intent and meaning shall be interpreted as follows:

### ABBREVIATIONS

|        |   |
|--------|---|
| AASHTO | American Association of State Highway and Transportation Officials        |
| ACI    | American Concrete Institute   |
| AISI   | American Iron and Steel Institute   |
| AIEE   | American Institute of Electrical Engineers                                |
| AISC   | American Institute of Steel Construction                                  |
| ANSI   | American National Standards Institute                                     |
| API    | American Petroleum Institute  |
| AREA   | American Railway Engineering Association                                  |
| ASCE   | American Society of Civil Engineers                                       |
| ASHRAE | American Society of Heating, Refrigerating and Air Conditioning Engineers |
| ASME   | American Society of Mechanical Engineers                                  |
| ASTM   | American Society of Testing and Materials                                 |
| AWG    | American Wire Gage  |
| AWPA   | American Wood-Preservers' Association                                     |
| AWS    | American Welding Society  |
| AWWA   | American Water Works Association  |
| BAAQMD | Bay Area Air Quality Management District                                  |
| CAEPA  | California Environmental Protection Agency                                |
| CCR    | California Code of Regulations  |
| CFR    | Code of Federal Regulations   |
| CIH    | Certified Industrial Hygienist  |
| DHS    | California Department of Health Services                                  |
| HSC    | California Health and Safety Code   |
| IEEE   | Institute of Electrical and Electronics Engineers                         |
| MSDS   | Material Safety Data Sheet  |
| NEC    | National Electric Code  |
| NEMA   | National Electrical Manufacturers Association                             |
| NFPA   | National Fire Protection Association                                      |
| RWQCB  | California Regional Water Quality Control Board                           |
| SAE    | Society of Automotive Engineers   |
| SWRCB  | California State Water Resources Control Board                            |
| UBC    | Uniform Building Code   |
| UL     | Underwriters Laboratories   |
| USEPA  | United States Environmental Protection Agency                             |
| WCLB   | West Coast Lumber Inspection Bureau                                       |
| WWPA   | Western Wood Products Association   |

**Acceptance:** The formal written acceptance by the District of a contract which has been completed in all respects in accordance with the Drawings and Specifications and any modifications thereof previously approved.

**Addendum or Letter of Clarification:** A change in the Specifications or Drawings issued prior to the opening of Proposals.

**Approved, Directed, Ordered, or Required:** Whenever these words or their derivatives are used, it is the intent, unless otherwise clearly stated, that approval or direction by the Engineer is indicated.

**Article:** A numbered portion of a title section of the Specifications.

**Bid:** See Proposal, Article 3.03

**Bidder:** Any individual, firm, partnership, corporation, or combination thereof, submitting a proposal for the work contemplated, acting directly or through a duly authorized representative.

**Board, Board of Directors:** The Board of Directors of the District.

**Certified Hazardous Materials Testing Laboratory:** A laboratory certified by the California Department of Health Services to perform specific chemical and physical analysis for hazardous materials.

**Certified Industrial Hygienist:** A professional who is certified by the American Board of Industrial Hygienists as trained to evaluate safety and health hazards and determine safety measures necessary for personnel working under hazardous conditions.

**Claim:** A separate demand by the Contractor for (A) a time extension, (B) payment of money or damages arising from work done by or on behalf of Contractor pursuant to the Contract and payment of which is not otherwise expressly provided for or the Contractor is not otherwise entitled to, or (C) an amount of payment which is disputed by the District.

**Code:** The terms Government Code, Labor Code, etc. refer to codes of the State of California.

**Construction Equipment:** Equipment used for the performance of work but not incorporated into the project.

**Contract:** The written agreement between Contractor and District including the Notice to Prospective Bidders, Proposals, Drawings, Specifications, Contract Bonds, Contract change orders, Addenda, and Letters of Clarification.

**Contract Prices:** The prices for the work set forth in a contract.

**Contractor:** The entity or person entering a contract with the District.

**Controlling Item of Work:** Any feature or combination of features of the work considered at the time by the Engineer, which if delayed, will delay the time of completion of a contract.

**Days:** Calendar days, unless otherwise designated.



**District:** The Santa Clara Valley Water District.

**Drawings:** The official drawings, working drawings, detail drawings, and supplemental drawings, or reproductions thereof, which show the location, character, dimensions, and details of the work to be done, and which are to be considered as part of a contract.

**Engineer:** The Designated Engineer of the District acting either directly or through properly authorized agents, who are acting within the scope of the particular duties delegated to them.

**Equipment:** Equipment incorporated or to be incorporated into the project.

**Fixed Costs:** Any necessary labor, material, and equipment costs directly expended on the item or items under consideration which remain constant regardless of the quantity of work done.

**Hazardous Material:** (A) Any substance, product, waste or other material of any nature whatsoever which is or becomes listed, regulated, or addressed pursuant to any federal, state or local statute, law, ordinance, resolution, code, rule, regulation, order or decree regulating, relating to, or imposing liability (including, but not limited to response, removal, and remediation costs) or standards of conduct or performance concerning any hazardous, toxic, explosive, corrosive, flammable, infectious, radioactive, carcinogenic, mutagenic or as otherwise dangerous waste, substance or material; (B) any substance, product, waste, or other material of any nature whatsoever whose presence in and of itself may give rise to liability under any of the above statutes or under any statutory or common law theory based on negligence, trespass, intentional tort, nuisance, strict or absolute liability or under any reported decisions of a state or federal court; (C) any substance without limitation, which contains petroleum or crude oil, including but not limited to, petroleum and petroleum products.

**Hazardous Waste:** Any substance or material, as defined in the California Hazardous Waste Control Act, Health and Safety Code Section 25, or the Resource Conservation and Recovery Act, 42 U.S.C. 6901 et seq.

**Liquidated Damages:** The amount stated in the Specifications, as provided in Government Code Section 53069.85, to be paid to the District or to be deducted from any payments due or to become due the Contractor for each day's delay in completing the whole or any specified portion of the work beyond the time allowed in the Specifications.

**Materials:** Materials incorporated or to be incorporated into the project.

**Personnel Protection:** Equipment and procedures which minimize human exposure to regulated materials, hazardous materials, hazardous wastes, or unsafe situations.

**Plans, Construction Plans:** The Drawings.

**Project:** The erection, construction, alteration, repair, or improvement to be accomplished under the Contract.

**Reasonable Accuracy:** Within the tolerances as shown on the Drawings or indicated in the Specifications.

**Regulated Material:** Any substance or combination of substances for which federal, state, or local regulations require special management, storage, disposal, or handling practices. This shall include, but not be limited to, materials defined as: Hazardous Materials and Waste; Designated Wastes (CCR, Title 23, Section 23-2522); and Special Waste (CCR, Title 22, Section 22-66195).

**Remediation:** Restoration of the contaminated soil, groundwater, or other materials to its pre-contaminated level or to a level acceptable to the District and local, state, and federal agencies.

**Responsible Bidder:** A bidder meeting the criteria set forth in District's Resolution No. 88-11.

**Subcontractor:** An entity or person contracting with the Contractor or another subcontractor to perform any portion of work.

**Specifications:** The directions, provisions, and requirements contained in the Standard Provisions, Special Provisions, and Technical Provisions.

**Ton:** 2,000 pounds avoirdupois.

**Work:** Everything required to complete the project.

## **SECTION 2. INTERPRETATION OF CONTRACT**

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### **2.01. Precedence of Contract**

In resolving conflicting requirements between the Contract Documents order of precedence shall be as follows:

1. Change orders
2. Agreement
3. Addenda or Letters of Clarification
4. Special Provisions
5. Technical Provisions
6. Drawings
7. Standard Provisions
8. State Specifications

With reference to the Drawings:

1. Figures govern over scaled dimensions
2. Detail drawings govern over general drawings

### **2.02. Clarification of Contract**

All corrections of readily apparent errors or omissions in the Contract may be made by the Engineer when such corrections are necessary for the proper fulfillment of their intention as construed by the Engineer. The misplacement, addition, or omission of any word, letter, figure, or punctuation mark which has no substantive legal effect will in no way change the due spirit, intent, or meaning of these Specifications.

Any part of the work not shown on the Drawings or described in these Specifications but which is reasonably or ordinarily implied by either, shall be furnished and installed by the Contractor as if fully described in these Specifications and shown upon the Drawings.

Should it appear that the work to be done or any of the matters relative thereto is not sufficiently detailed or explained in the Specifications or on the Drawings, or if the Contractor discovers during the course of the work any discrepancies between the Contract Drawings and conditions in the field, or any errors or omissions in the Contract or in the layout given by stakes, points, or instructions, the bidder or Contractor shall apply in writing to the Engineer for such further explanations as may be necessary and shall conform to them as part of the Contract. In the event of any doubt or questions arising respecting the true meaning of the Contract, reference shall be made in writing to the Engineer, whose decision thereon shall be final. Any work done after such discovery until authorized by the Engineer, will be done at the Contractor's risk.

### **2.03. State Specifications**

The work set forth in these Specifications shall be accomplished in accordance with appropriate provisions of construction details, Section 10 to Section 95, inclusive, and as to cost reduction incentive, contract termination, and compensation for time extensions in accordance with Section 5-1.14, Section 8-1.11, and Section 8-1.09 respectively, of "State of California, Department of Transportation, Standard Specifications," latest

edition in effect at the time that bids are received by the District, insofar as they apply. Said Specifications are herein referred to as the State Specifications and are by reference made a part of these Specifications the same as though set out in full. In the event of conflict between the State Specifications and the Standard, Special, or Technical Provisions of these Specifications or the Drawings, these Specifications and Drawings shall apply.

## **SECTION 3. PROPOSAL REQUIREMENTS AND CONDITIONS**

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### **3.01. Approximate Estimate**

The quantities given in the Notice to Prospective Bidders, Proposal, and Contract forms are approximate only, being given as a basis for the comparison of Proposals, and the District does not, expressly or by implication, agree that the actual amount of work will correspond therewith, but reserves the right to increase or decrease the amount of any class or portion of the work, or to omit portions of the work, as may be deemed necessary or advisable by the Engineer.

### **3.02. Examination of Drawings, Specifications, and Site of Work**

The bidder shall examine carefully the site of the work contemplated and the Proposal, Drawings, Specifications, and Contract forms therefor. The submission of a Proposal will be conclusive evidence that the bidder has investigated and is fully aware of the conditions and difficulties to be encountered, of the character, quality, and quantities of work to be performed and materials to be furnished, and of the requirements of the Proposal, Drawings, Specifications, and other Contract documents.

Where investigation of subsurface conditions has been made by the District in respect to foundation or other design, bidders may inspect the records of the District as to such investigation, including examination of samples and drill cores, if any. When logs of test boring showing a record of the data obtained by the District's investigation of subsurface conditions are made available, said logs represent only the opinion of the District as to the character of material encountered by it in its test borings and are made available only for the convenience of bidders.

**Note that the District investigation of subsurface conditions is made for the purpose of design.** The District assumes no responsibility whatever in respect to the sufficiency of test borings, or accuracy of the log of test borings, or other preliminary investigations, or of the interpretation thereof. There is no guarantee expressed or implied that the conditions indicated are representative of those existing throughout the work, or any part of it, or that unforeseen developments may not occur.

Making such information available to bidders is not to be construed in any way as a waiver of the provisions of Article 3.02, and bidders must satisfy themselves through their own investigations, analysis, and interpretations as to conditions to be encountered.

No information derived from such inspection of records or preliminary investigations made by the District, or from the Engineer, or from assistants, or from the maps, Specifications, profiles, or Drawings will in any way relieve the Contractor from any risk or from properly fulfilling all the terms of the Contract. Records of such preliminary investigations as may have been made by the District may be inspected at the office of the District, 5750 Almaden Expressway, San Jose, California 95118, or at such other locations as may be stated in the Notice to Prospective Bidders.

### **3.03. Proposal Form**

The Proposal Form is bound herein, and, when filled out by the Bidder and executed, shall be submitted as the Bidder's Proposal. All Proposals shall show the prices

proposed in figures in the spaces provided, and shall be signed by the Bidder. The Bidder shall fill out all blanks in the Proposal Form as therein required.

Payment for the various items listed in the Proposal Form shall constitute full compensation for furnishing all plant, labor, equipment, appliances, and materials, and performing all operations required to complete all work in conformity with the Drawings and Specifications. All costs for work not specifically mentioned in the Proposal Form shall be included in the Contract prices for the items listed.

In the case of unit basis items, the amount set forth under the "Total" column shall be the extension of the item unit price bid on the basis of the estimated quantity for the item.

In case of discrepancy between the item unit price and the total price set forth for the item, the item unit price shall prevail; provided, however, that if the amount set forth as an item unit price is ambiguous, unintelligible, or uncertain for any cause, or is omitted, or in the case of unit basis items, is the same amount as the entry in the "Total" column, then the amount set forth in the "Total" column for the item shall prevail in accordance with the following:

- A. As to lump sum items, the amount set forth in the "Total" column shall be the item price.
- B. As to unit basis items, the amount set forth in the "Total" column shall be divided by the estimated quantity for the item and the price thus obtained shall be the item unit price.

A copy of each addendum and/or letter of clarification to the Specifications or Drawings shall be attached securely to the Proposal (refer to Article 3.10).

#### **3.04. Queries on Bidding**

Questions regarding the Specifications or Drawings or any other portion of the Contract, or any addendum, or letter of clarification thereto shall be directed to the Designated Engineer of the Santa Clara Valley Water District, 5750 Almaden Expressway, San Jose, California 95118, in writing. No interpretation of the meaning of the Specifications, Drawings, or other prebid documents will be made to any bidder orally. Any written queries received later than 7 days before the bid due date may not be answered.

#### **3.05. Rejection of Proposals**

Proposals may be rejected if they show any alterations of form, additions not called for, conditional bids, incomplete bids, erasures, or irregularities of any kind. Proposals in which the prices, in the opinion of the District, are unbalanced, may be rejected.

When proposals are signed by an agent, other than the officer or officers of a corporation authorized to sign contracts on its behalf, or a member of a partnership, a written authorization or Power of Attorney should be on file with the District prior to

opening proposals or submitted with the Proposal; otherwise, the Proposal may be rejected as irregular and unauthorized.

**3.06. Proposal Guarantee**

All proposals shall be presented under sealed cover and accompanied by one of the following forms of bidder's security; cash, a cashier's check, certified check, or a bidder's bond executed by an admitted surety, made payable to the District. The security shall be in an amount equal to at least 10 percent of the total Contract price in the Proposal. A proposal will not be considered unless one such form of bidder's security is enclosed with it.

A bidder's bond will not be accepted unless it substantially conforms to the bond form included with the Proposal form and is properly filled out and executed. If desired, the bond form included therein, properly filled out as directed, may be executed and used as the bidder's bond. Blanks conforming to this form may be obtained from the District.

**3.07. Withdrawal of Proposals**

Any proposal may be withdrawn at any time prior to the time fixed in the Notice to Prospective Bidders for the opening of proposals only by written request for the withdrawal of the Proposal filed with the Clerk of the Board of Directors. The request shall be executed by the bidder or duly authorized representative. The withdrawal of a proposal does not prejudice the right of the bidder to file a new proposal.

**3.08. Joint Proposals**

If two or more bidders desire to bid jointly on a project, they shall file an affidavit of joint venture with the District in the form approved by the District, and such affidavit of joint venture will be valid only for the specified project for which it is filed. If such affidavit of joint venture is not filed as aforesaid and approved by the District prior to the time for opening proposals on the specific project for which it is submitted, a joint proposal submitted by the same bidders may be disregarded.

**3.09. Disqualification of Bidders**

Submittal of more than one proposal form from an individual, firm, partnership, corporation, or a combination thereof under the same or different names, will not be considered. If there is reason for believing that collusion exists among the bidders, none of the participants in such collusion will be considered for award of this Contract.

**3.10. Addendum and Clarification**

Addenda and letters of clarification may be issued prior to opening of proposals and shall be deemed a part of the original Specifications and Drawings. All such additions, or changes, or clarifications shall be considered by the bidder in preparation of the Proposal. Addenda and letters of clarification will be sent to each prospective bidder at the address indicated in the planholders' form and shall be attached to the Proposal.

**3.11. Guaranty**

The Contractor may be required to furnish a written guaranty covering certain items of material and equipment for varying periods of time from the date of acceptance of the Contract. The material and equipment to be guaranteed, the form of guaranty, and the time limit of the guaranty will be specified in the Special Provisions. Said guaranty shall be signed and delivered to the Engineer before final payment will be made. Upon completion of the Contract, the amounts of the Contract bonds required in Article 4.03 may be reduced to conform to the total amount of the Contract bid prices for the items to be guaranteed and this amount shall continue in full force and effect for the duration of the guaranty period.

Guarantee periods shall commence on the date equipment or material is placed into service at the direction of the District. In the event such items are not placed into service prior to partial or final acceptance of the project, the guarantee period will commence on the date of such acceptance.

**3.12. Post Bid Opening Protest**

A protest based upon alleged improprieties in the solicitation process which can only be apparent after bid opening or the closing date for receipt of additional post bid opening documentation, must be filed no later than 8 days not including Sundays and legal holidays following the bid opening. A protest shall contain a statement of the grounds for a protest and supporting documentation and shall be submitted to the Designated Engineer specified in Article 13.01.

The District's final decision on a protest will be issued no later than 10 days not including Sundays and legal holidays following bidder's submitted protest.

Protest based upon restrictive specifications or alleged proprieties in the solicitation process which are apparent to all parties prior to bid opening and of which protester should have known will not be accepted.



## **SECTION 4. AWARD OF CONTRACT**

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### **4.01. Award of Contract**

The District reserves the right to reject or waive irregularities in any and all proposals.

The award of the Contract, if it be awarded, will be to the lowest responsible bidder whose Proposal complies with the requirements prescribed and who is licensed in accordance with law.

The award, if made, will be made within 45 days after the opening of the proposals. If the lowest responsible bidder refuses or fails to execute the Contract, the award may be made to the second lowest responsible bidder. The award, if made, will be made within 75 days after the opening of the proposals. If the second lowest responsible bidder refuses or fails to execute the Contract, the Contract may be awarded to the third lowest responsible bidder. The award, if made, will be made within 105 days after the opening of the proposals. The periods of time specified above within which the award of Contract may be made shall be subject to extension for such further period as may be agreed upon in writing between the District and the bidder concerned.

### **4.02. Return of Proposal Guarantees**

Within 10 days after the award of the Contract to the lowest responsible bidder, the District will return the Proposal guarantees, other than bidder's bonds, accompanying such of the proposals as are not to be further considered in making the award. Retained Proposal guarantees will be held until the Contract has been executed, after which all Proposal guarantees, except bidder's bonds and any guarantees which have been forfeited, will be returned to the bidders whose proposals they accompany.

### **4.03. Contract Bonds**

The Contractor shall furnish in the form attached hereto, a performance bond and a payment bond executed by both the Contractor and the sureties, each equal to 100 percent of the bid.

Should any surety or sureties be deemed unsatisfactory at any time by the District, notice will be given the Contractor to that effect, who shall forthwith substitute a new surety or sureties satisfactory to the District. No further payment shall be deemed due or will be made under this Contract until the new sureties shall qualify and be accepted by the District.

### **4.04. Execution of Contract**

The Contract Agreement shall be signed by the lowest responsible bidder and returned, together with the Contract bonds, within ten (10) days, not including Sundays and legal holidays, after the bidder has received the Contract Agreement for execution.

### **4.05. Failure to Execute Contract**

Failure of the lowest responsible bidder, the second lowest responsible bidder, or the third lowest responsible bidder to execute the Contract and file acceptable bonds as

provided herein within 10 days, not including Sundays and legal holidays, after such bidder has received the Contract for execution, shall be just cause for the annulment of each award and the forfeiture of each Proposal guarantee with respect to which such failure occurs.

## **SECTION 5. SCOPE OF WORK**

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### **5.01. Work to be Done**

The work to be done consists of furnishing all labor, methods or processes, implements, tools, machinery, construction equipment, materials of any kind, and installed manufactured equipment, except as otherwise specified herein, to be furnished by the District or from sources provided by the District, which are required to construct in a good and workerlike manner all the work herein specified.

### **5.02. Final Cleanup**

Before final inspection the Contractor shall clean the premises, and unless otherwise specified, remove all rubbish, excess materials, falsework, temporary structures, and equipment. All parts of the work shall be left in a neat and presentable condition to the satisfaction of the Engineer.

### **5.03. Change in Work**

- A. The District may, at any time or from time to time, order additions, deletions, or revisions in the work; these will be authorized by a written order issued by the Engineer and/or by a change order. Upon receipt of any such document, the Contractor shall promptly proceed with the work involved which will be performed under the applicable conditions of the Contract.

Changes in the Contract price shall be determined in accordance with Article 5.04. Changes in the Contract time shall be determined in accordance with Article 5.05.

- B. If the District and the Contractor are unable to agree as to the extent, if any, of an increase or decrease in the Contract price or an extension or shortening of the Contract time that would be required as a result of a written order, a claim may be made therefor as provided in Articles 5.08 or 5.09.
- C. The Contractor shall not be entitled to an increase in the Contract price nor an extension of the Contract time with respect to any work performed that is not required by the Contract, except in the case of an emergency, and except in the case of uncovering work as provided in Article 9.07.
- D. The District and the Contractor shall execute appropriate change orders covering:
1. changes in the work which are ordered by the District pursuant to paragraph A above;
  2. changes in the Contract price and/or Contract time which are agreed to by the parties, or
  3. any other changes agreed to by the parties.

**5.03.01. Allowable Quantity Variations**

- A. General:** Increases or decreases in the quantity of a Contract item of work will be determined by comparing the actual pay quantity of an item of work with the approximate quantity in the listing of the bid items contained in the Proposal.

If the actual pay quantity of an item of work varies from the approximate quantity by 25 percent or less, payment will be made for the actual quantity of work performed at the Contract unit price listed in the Proposal.

If the actual pay quantity of an item of work varies from the approximate quantity by more than 25 percent, in the absence of an executed Contract Change Order specifying the compensation to be paid, the compensation payable to the Contractor will be determined in accordance with Article 5.03.01.A.1, or Article 5.03.01.A.2.

- 1. Increases of More Than 25 Percent:** If the actual pay quantity of an item of work exceeds the approximate quantity by more than 25 percent, the amount of work in excess of 125 percent of the approximate quantity will be paid for by adjusting the Contract unit price. Such adjustment of the Contract unit price will be the positive or negative difference between the Contract unit price and the actual unit cost of the total pay quantity of the item. At the sole option of the Engineer, the actual unit cost of the work involved in such excess will be determined in accordance with Article 5.04.01.C.2 (by mutual acceptance of a lump sum amount) or Article 5.04.01.C.3 (cost of work, based on time and materials).

If the cost of an item of work includes fixed costs, the fixed costs will be deemed to have been recovered by the Contractor by the payments made for 125 percent of the approximate quantity at the Contract unit price for the item and in computing the actual unit cost, the fixed costs will be excluded.

When the compensation payable for the quantity of work performed in excess of 125 percent of the approximate quantity is less than \$5,000 at the Contract unit price, no adjustment in the Contract unit price will be made unless requested in writing by the Contractor within 14 days from the date the Contractor became aware, or should have reasonably become aware, of the increase in quantity.

- 2. Decreases of More Than 25 Percent:** If the actual pay quantity of an item of work is less than 75 percent of the approximate quantity, an adjustment in compensation will not be made unless the Contractor makes a request in writing within 14 days from the date the Contractor became aware, or should have reasonably become aware, of the decrease in quantity. If the Contractor makes a request, the actual pay quantity of said item of work performed will be paid for by adjusting the Contract unit price. Such adjustment of the Contract unit price will be the positive or negative difference between the Contract unit price and the

actual unit cost of the total pay quantity of the item, including fixed costs. At the sole option of the Engineer, payment for the actual quantity of work will be made in accordance with Article 5.04.01.C.2 (by mutual acceptance of a lump sum amount) or Article 5.04.01.C.3 (cost of work based on time and materials).

Payment for the actual pay quantity of such item of work will in no case exceed the payment which would have been made for the performance of 75 percent of the approximate quantity of such item at the Contract unit price.

- B. Eliminated Items:** If any Contract item of the work is eliminated in its entirety, payment will be made to the Contractor for the actual cost incurred in connection with the eliminated Contract item if incurred prior to the date of notification in writing by the Engineer of such elimination.

If acceptable material is ordered by the Contractor for an eliminated Contract item prior to the date of notification of such elimination by the Engineer, and if orders for such material cannot be canceled, payment for such material will be made at the actual cost to the Contractor. In such case, the material shall become the property of the District. If the materials can be returned to the vendor and if the Engineer so directs, the material shall be returned and the Contractor will be paid for the actual cost for returning the material.

The actual costs to be paid by the District to the Contractor in accordance with this Article will be computed in accordance with Article 5.04.02.

- C. Supplemental Contract Items:** Items noted as "Supplemental" in the Proposal may be deleted entirely or in part at the sole discretion of the District. The provisions of Articles 5.03.01.A.1., 5.03.01.A.2, and 5.03.01.B shall not apply to "Supplemental Contract Items."

#### **5.04. Change in Contract Price**

##### **5.04.01. General**

- A.** The Contract price constitutes the total compensation payable to the Contractor for performing the work. All duties, responsibilities, and obligations assigned to or undertaken by the Contractor to perform the work shall be at the Contractor's expense without change in the Contract price.
- B.** The Contract price may only be changed by a change order. Any request for an increase in the Contract price shall be based on written notice delivered by the Contractor to the Engineer promptly, but in no event later than 10 days after the date of the occurrence of the event giving rise to the request and stating the general nature of the request. Notice of the amount of the request with supporting data shall be delivered within 45 days after the date of the occurrence, unless the Engineer allows an additional period of time to ascertain more accurate data in support of the request, and shall be accompanied by the

Contractor's written statement that the amount requested covers all amounts (direct, indirect, and consequential) to which the Contractor is entitled as a result of the occurrence of the event. No request for an adjustment in the Contract price will be valid if not submitted in accordance with this Article.

- C. The value of any work covered by a change order or of any request for an increase or decrease in the Contract price shall be determined in one of the following ways:
  - 1. Where the work involved is covered by unit prices contained in the Contract documents, by application of unit prices to the quantities of the items involved; or
  - 2. By mutual acceptance of a lump sum, which may include an allowance for overhead and profit not necessarily in accordance with Article 5.04.04; or
  - 3. On the basis of the cost of work (determined as provided in Articles 5.04.02. and 5.04.03.) plus a Contractor's fee for overhead and profit (determined as provided in Article 5.04.04.)

#### **5.04.02. Cost of Work (Based on Time and Materials)**

- A. **General:** The term "cost of work" means the sum of all costs necessarily incurred and paid by the Contractor for labor, materials, and equipment in the proper performance of work. Except as otherwise may be agreed to in writing by the District, such costs shall be in amounts no higher than those prevailing in the locality of the project.
- B. **Labor:** The cost of labor used in performing work by the Contractor, a subcontractor, or other forces, will be the sum of the following:
  - 1. The actual wages paid plus any employer payments to or on behalf of workers for fringe benefits, including health and welfare, pension, vacation, and similar purposes. The cost of labor may include the wages paid to foremen when it is determined by the Engineer that the services of foremen do not constitute a part of the overhead allowance.
  - 2. There will be added to the actual wages as defined above, a percentage set forth in the latest "Labor Surcharge and Equipment Rental Rates" in use by the California State Department of Transportation which is in effect on the date upon which the work is accomplished. This percentage shall constitute full compensation for all payments imposed by State and Federal laws including, but not limited to, workers' compensation insurance and Social Security payments.
  - 3. The amount paid for subsistence and travel required by collective bargaining agreements.

4. For equipment operators, payment for the actual cost of labor and subsistence or travel allowance will be made at the rates paid by the Contractor to other workers operating similar equipment already on the work, or in the absence of such labor, established by collective bargaining agreements for the type of workers and location of the extra work, whether or not the operator is actually covered by such an agreement. A labor surcharge will be added to the cost of labor described herein in accordance with the provisions of subsection 2 of Article 5.04.02.B herein, which surcharge shall constitute full compensation for payments imposed by State and Federal laws, and all other payments made to on behalf of workers other than actual wages.

**C. Materials:** The cost of materials used in performing work will be the cost to the purchaser, whether Contractor or subcontractor, from the supplier thereof, except as the following are applicable:

1. Trade discounts available to the purchaser shall be credited to the District notwithstanding the fact that such discounts may not have been taken by the Contractor.
2. For materials secured by other than a direct purchase and direct billing to the purchaser, the cost shall be deemed to be the price paid to the actual supplier as determined by the Engineer. Markup, except for actual costs incurred in the handling of such materials, will not be allowed.
3. Payment for materials from sources owned wholly or in part by the purchaser shall not exceed the price paid by the purchaser for similar materials from said sources on extra work items or the current wholesale price for such materials delivered to the work site, whichever price is lower.
4. If, in the opinion of the Engineer, the cost of material is excessive, or the Contractor does not furnish satisfactory evidence of the cost of such material, then the cost shall be deemed to be the lowest current wholesale price for the quantity concerned delivered to the work site, less trade discount. The District reserves the right to furnish materials for the extra work and no claim shall be made by the Contractor for costs and profit on such materials.

**D. Equipment:** The Contractor will be paid for the use of equipment at the rental rate listed for such equipment specified in the current edition of the Department of Transportation publication entitled, "Labor Surcharge and Equipment Rental Rates," which is in effect on the date upon which the work is accomplished. Such rental rates will be used to compute payments for equipment whether the equipment is under the Contractor's control through direct ownership, leasing, renting, or another method of acquisition. The rental rate to be applied for use of each item of equipment shall be the rate resulting in the least total cost to the District for the total period of use. If it is deemed necessary by the Contractor to use equipment not listed in the foregoing publication, an equitable rental rate for

the equipment will be established by the Engineer. The Contractor may furnish cost data which might assist the Engineer in the establishment of the rental rate.

1. The rental rates paid, as above provided, shall include the cost of fuel, oil, lubrication supplies, small tools, necessary attachments, repairs and maintenance of all kinds, depreciation, storage, insurance, and all incidentals. Operators of equipment will be separately paid for as provided in subsection 4 of Article 5.04.02.B.
2. All equipment shall be in good working condition and suitable for the purpose for which the equipment is to be used.
3. Before construction equipment is used on the extra work, the Contractor shall plainly stencil or stamp an identifying number thereon at a conspicuous location, and shall furnish to the Engineer, in duplicate, a description of the equipment and its identifying number.
4. Unless otherwise specified, manufacturer's ratings and manufacturer-approved modifications shall be used to classify equipment for the determination of applicable rental rates. Equipment which has no direct power unit shall be powered by a unit of at least the minimum rating recommended by the manufacturer.
5. Individual pieces of equipment or tools having a replacement value of \$500 or less, whether or not consumed by use, shall be considered to be small tools and no payment will be made therefor.

**E. Owner-Operated Equipment:** When owner-operated equipment is used to perform work and is to be paid for as extra work, the Contractor will be paid for the equipment and operator as follows:

Payment for the equipment will be made in accordance with the provisions in Article 5.04.02.D. "Equipment."

Payment for the cost of labor and subsistence or travel allowance will be made at the rates paid by the Contractor to other workers operating similar equipment already on the project, or, in the absence of such other workers, at the rates for such labor established by collective bargaining agreement for type of worker and location of the work, whether or not the owner-operator is actually covered by such an agreement. A labor surcharge will be added to the cost of labor described herein, in accordance with the provisions in subsection 2 of Article 5.04.02(B), "Labor."

To the direct cost of equipment rental and labor, computed as provided herein, will be added the markup for equipment rental and labor as provided in Article 5.04.04, "Contractor's Fee."

**F. Equipment Time:** The rental time to be paid for equipment on the work shall be the time the equipment is in productive operation on the work being performed



and shall include the time required to move the equipment to the new location and return it to the original location or to another location requiring no more time than that required to return it to its original location; except, that moving time will not be paid if the equipment is used on other than the extra work. Loading and transporting costs will be allowed, in lieu of moving time, when the equipment is moved by means other than its own power. No payment will be made for loading and transporting costs when the equipment is used at the site of the extra work on other than the extra work. The following shall be used in computing the rental time of equipment on the work:

1. When hourly rates are listed, any part of an hour less than 30 minutes of operation shall be considered to be ½-hour of operation, and any part of an hour in excess of 30 minutes will be considered 1-hour of operation.
2. When daily rates are listed, operation for any part of a day less than 4 hours shall be considered to be ½-day of operation.
3. Rental time will not be allowed while equipment is inoperative due to breakdowns or Contractor caused delays.

**G. Cost of Work Documentation:** The Contractor shall furnish the Engineer Daily Extra Work Reports on a daily basis covering the direct costs of labor and materials and charges for equipment whether furnished by the Contractor, subcontractor, or other forces. The District will provide the Extra Daily Work Report forms to the Contractor. The Contractor or an authorized agent shall sign each Daily Extra Work Report. The Daily Extra Work Report shall provide names and classifications of workers and hours worked; size, type, and identification number of equipment; and the hours operated. Copies of certified payrolls and statement of fringe benefit shall substantiate labor charges. Valid copies of vendor's invoices shall substantiate material charges.

The Engineer will make any necessary adjustments. When these reports are agreed upon and signed by both parties, they shall become the basis of payment for the work performed, but shall not preclude subsequent adjustment based on a later audit.

The Contractor shall inform the Engineer when extra work will begin so that the District inspector can concur with the Daily Extra Work Reports. Failure to conform to these requirements may impact the Contractor's ability to receive proper compensation.

#### **5.04.03. Special Services**

Special services are defined as that work characterized by extraordinary complexity, sophistication, or innovations, or a combination of the foregoing attributes which are unique to the construction industry. The following may be considered by the Engineer in making estimates for payment for special services:

- A. When the Engineer and the Contractor, by agreement, determine that a special service is required which cannot be performed by the forces of the Contractor or those of any of its subcontractors, the special service may be performed by an entity especially skilled in the work to be performed. After validation of invoices and determination of market values by the Engineer, invoices for special services based upon the current fair market value thereof may be accepted without complete itemization of labor, material, and equipment rental costs.
- B. When the Contractor is required to perform work necessitating special fabrication or machining process in a fabrication or a machine shop facility away from the jobsite, the charges for that portion of the work performed at the offsite facility may, by agreement, be accepted as a special service and accordingly, the invoices for the work may be accepted without detailed itemization.
- C. All invoices for special services will be adjusted by deducting all trade discounts offered or available, whether the discounts were taken or not. In lieu of the allowances for overhead and profit on labor, materials, and equipment specified in Article 5.04.04. herein, a single allowance of ten (10) percent will be added to invoices for special services.

**5.04.04. Contractor's Fee**

- A. Work ordered on the basis of time and materials will be paid for at the actual and necessary cost as determined by the Engineer, plus allowances for overhead and profit which allowances shall constitute the "Contractor's Fee," except as provided in subparagraph B of this Article. For extra work involving a combination of increases and decreases in the work, the actual necessary cost will be the arithmetic sum of the additive and deductive costs. The allowance for overhead and profit shall include compensation for superintendence, bond and insurance premiums, taxes, all field and home office expenses, and all other items of expense or cost not included in the cost of labor, materials, or equipment provided for under Articles 5.04.02.B, C, D, and E, herein. The allowance for overhead and profit will be made in accordance with the following schedule:

| <b>Actual Necessary Cost</b> | <b>Overhead and Profit Allowance</b> |
|------------------------------|--------------------------------------|
| Labor .....                  | 33 percent                           |
| Materials .....              | 15 percent                           |
| Equipment .....              | 15 percent                           |

- B. Labor, materials, and equipment may be furnished by the Contractor or by the subcontractor on behalf of the Contractor. When all or any part of the extra work is performed by a subcontractor, the allowance specified in subparagraph A of Article 5.04.04 shall only be applied to the labor, materials, and equipment costs of the subcontractors to which the Contractor may add 5 percent of the subcontractor's total cost for the extra work. Regardless of the number of hierarchal tiers of subcontractors, the 5 percent increase above the subcontractor's total cost, which includes the allowances for overhead and profit

specified herein, may be applied one time only for each separate work transaction.

**5.04.05. Compensation for Time Extensions**

Adjustments in compensation for time extension will be allowed only for causes in Article 5.05.01.B.1 through Article 5.05.01.B.4 computed in accordance with Article 5.04 and the following. No adjustments in compensation will be allowed when District-caused delays to a controlling item of work and Contractor-caused delays to a controlling item of work occur concurrently or for causes in Article 5.05.01.B.5 through Article 5.05.01.B.6.

Compensation for idle time of equipment will be determined in accordance with the provisions in Article 5.04.02.E and Section 8-1.09 of the State Specifications.

**5.05. Change of Contract Time****5.05.01. General**

- A. The Contract time may only be changed by a change order. Any request for an extension of the Contract time shall be based on written notice delivered by the Contractor to the Engineer promptly, but in no event later than 10 days after the date of the occurrence of the event giving rise to the request and stating the general nature of the request. Notice of the extent of the request with supporting data shall be delivered within 45 days after the date of such occurrence, unless the Engineer allows an additional period of time to ascertain more accurate data in support of the request, and shall be accompanied by the Contractor's written statement that the adjustment requested is the entire adjustment to which the Contractor has reason to believe it is entitled as a result of the occurrence of said event. No request for an adjustment in the Contract time will be valid if not submitted in accordance with the requirements of this Article.

The Contract time will only be extended when a delay occurs which impacts a controlling item of work as shown on the work schedules required in the Special Provisions. Time extensions will be allowed only if the cause is beyond the control and without the fault or negligence of the Contractor. Time extensions will also be allowed when District-caused delays to a controlling item of work and Contractor-caused delays to a controlling item of work occur concurrently. The Contractor will be notified if the Engineer determines that a time extension is not justified.

- B. The Contract time will be extended in an amount equal to time lost due to delays beyond the control of the Contractor if a request is made therefor as provided in this Article. An extension of Contract time will only be granted for days on which the Contractor is prevented from proceeding with at least 75 percent of the normal labor and equipment force actually engaged on the said work, by said occurrences or conditions resulting immediately therefrom which impact a controlling item of work as determined by the Engineer. Such delays shall include:

1. Changes.
2. Failure of the District to furnish access, right of way, completed facilities of related projects, Drawings, materials, equipment, or services for which the District is responsible.
3. Survey error by the District.
4. Suspension of work pursuant to Articles 7.05(A) and 7.05(C).
5. Occurrences of a severe and unusual nature including, but not restricted to, acts of God, fires, and excusable inclement weather. An "act of God" means an earthquake, flood, cloudburst, cyclone, or other cataclysmic phenomena of nature beyond the power of the Contractor to foresee or to make preparation in defense against, but does not include ordinary inclement weather. Excusable inclement weather is any weather condition, the duration of which varies in excess of the average conditions expected, which is unusual for the particular time and place where the work is to be performed, or which could not have been reasonably anticipated by the Contractor, as determined from U.S. Weather Bureau records for the proceeding 3-year period or as provided for in the Special Provisions.
6. Act of the public enemy, act of another governmental entity, public utility, epidemic, quarantine restriction, freight embargo, strike, or labor dispute. A delay to a subcontractor or supplier due to the above circumstances will be taken into consideration for extensions to the time of completion.

**5.05.02. Extensions of Time for Delay Due to Excusable Inclement Weather**

- A. The Contract time will be extended for as many days in excess of the average number of days of excusable inclement weather, as defined in Article 5.05.01.B.5., as the Contractor is specifically required under the Special Provisions to suspend construction operations, or as many days as the Contractor is prevented by excusable inclement weather, or conditions resulting immediately therefrom, from proceeding with at least 75 percent of the normal labor and equipment force engaged on critical items of work as shown on the schedule.
- B. Should the Contractor prepare to begin work at the regular starting time at the beginning of any regular work shift on any day on which excusable inclement weather, or the conditions resulting from the weather prevents work from beginning at the usual starting time and the crew is dismissed as a result thereof, the Contractor will be entitled to a 1-day extension whether or not conditions change thereafter during said day and the major portion of the day could be considered to be suitable for such construction operations.
- C. The Contractor shall base the construction schedule upon the inclusion of the number of days of excusable inclement weather specified in the Article titled

"Excusable Inclement Weather Delays," of the Special Provisions. No extension of the Contract time due to excusable inclement weather will be considered until after the said aggregate total number of days of excusable inclement weather has been reached; however, no reduction in Contract time would be made if said number of days of excusable inclement weather is not reached.

**5.06. Changed Site Conditions**

If any work involves digging trenches or other excavations below the surface, the Contractor shall promptly and before the following conditions are disturbed, notify the District in writing of any:

- A. Material that the Contractor believes may be a regulated material that is required to be removed to a Class I, Class II, or Class III disposal site in accordance with provisions of existing law.
- B. Subsurface or latent physical conditions at the site differing from those indicated in this Contract.
- C. Unknown physical conditions at the site of any unusual nature, different materially from those ordinarily encountered and generally recognized as inherent in work of the character provided for in the Contract.

The District will promptly investigate the condition and if it finds that the conditions do materially so differ, or do involve regulated material, and cause a decrease or increase in the Contractor's cost of, or the time required for, performance of any part of the work, the District will issue a change order under the procedures described in this Contract. For regulated materials, the District reserves the right to use other forces for exploratory work to identify and determine the extent of such material and for removing regulated material from such areas.

In the event that a dispute arises between the District and the Contractor on whether the conditions materially differ or on the Contractor's cost of, or time required for, performance of any part of the work, the Contractor shall not be excused from any scheduled completion date provided for by this Contract but shall proceed with all work to be performed under the Contract. The Contractor shall retain any and all rights provided either by this Contract or by law which pertain to the resolution of disputes and protests between the contracting parties.

**5.07. Cost Reduction Incentive**

The Contractor may submit to the Engineer, in writing, proposals for modifying the Drawings, Specifications, or other requirements of the Contract for the sole purpose of reducing the total cost of construction as provided for in Section 5-1.14 of the State Specifications, wherein the words "State" and "Department" shall mean District.

**5.08. Protests**

If the Contractor considers any work demanded to be outside of the requirements of the Contract, or considers any record or ruling or act or omission of the Engineer to be unfair, the Contractor shall immediately, upon such work being demanded, or such record or ruling being made, ask in writing for written instructions or decisions, whereupon the Contractor shall proceed without delay to perform the work or to conform to the record or ruling and, within 15 days after date of receipt of the written instructions or decisions, shall file a written protest with the Engineer stating clearly and in detail the basis of the protest. Except for such protests as are made of record in the manner herein specified and within the time limit stated, the records, rulings, instructions, decisions, and acts or omissions of the Engineer shall be final and conclusive. Instructions and decisions of the Engineer contained in letters transmitting Drawings to the Contractor shall be considered as written instructions and decisions subject to protest as herein provided.

**5.09. Claims**

Claims by the Contractor must be submitted to the Engineer on or before the date of final payment. Claims shall be in writing, shall specify the basis for each claim, shall refer to the applicable provision or provisions of the Contract, and shall show the method of computation and the actual amount claimed. The claim shall include documents necessary to substantiate the claim and to establish liability, causation, and damages. All other factual data, including documentation of actual costs pertaining to that claim, shall be submitted. No claim shall be considered where there has been a failure to comply with the requirements relative to protests as written elsewhere in these Specifications. The presentation of a claim shall be an express condition precedent to the Contractor's recourse to: (A) informal conferences; (B) nonbinding judicially supervised mediation, and (C) judicial arbitration to resolve disputes on construction claims of \$375,000 or less, or court action upon the Contract for claim in excess of \$375,000 in compliance with Section 20104 of the Public Contract Codes.

**5.09.01. Claims Less Than Fifty Thousand Dollars**

For claims of less than fifty thousand dollars (\$50,000), the Engineer shall respond in writing to any written claim within 45 days of receipt of the claim, or may request, in writing, within 30 days of receipt of the claim, any additional documentation supporting the claim or relating to defenses or claims the District may have against the Contractor.

If additional information is thereafter required, it shall be requested and provided pursuant to this Article upon mutual agreement of the Engineer and the Contractor.

The Engineer's written response to the claim, as further documented, shall be submitted to the Contractor within 15 days after receipt of the further documentation or within a period of time no greater than that taken by the Contractor in producing the additional information, whichever is greater.

**5.09.02. Claims From Fifty Thousand Dollars to Three Hundred and Seventy-Five Thousand Dollars**

For claims greater than or equal to fifty thousand dollars (\$50,000) and less than or equal to three hundred seventy-five thousand dollars (\$375,000), the Engineer shall respond in writing to all written claims within 60 days of receipt of the claim, or may request in writing, within 30 days of receipt of the claim, any additional documentation supporting the claim or relating to defenses or claims the District may have against the Contractor.

If additional information is thereafter required, it shall be requested and provided pursuant to this Article, upon mutual agreement of the Engineer and the Contractor.

The Engineer's written response to the claims, as further documented, shall be submitted to the Contractor within 30 days after receipt of the further documentation, or within a period of time no greater than that taken by the Contractor in producing the additional information or requested documentation, whichever is greater.

**5.09.03. Informal Conferences**

If the Contractor disputes the Engineer's written response, or the Engineer fails to respond within the time prescribed, the Contractor may so notify the Engineer, in writing, either within 15 days of receipt of the Engineer's response or within 15 days of the Engineer's failure to respond within the time prescribed, respectively, and demand an informal conference to meet and confer for settlement of the issues in dispute. Upon such demand, the Engineer shall schedule a meet and confer conference within 30 days.

If, following the meet and confer conference, the claim or any portion remains in dispute, the Contractor may file a claim pursuant to Chapter 1 (commencing with Section 900) and Chapter 2 (commencing with Section 910) of Part 3 of Division 3.6 of Title 1 of the Government code. For purposes of those provisions, the running of the period of time within which a claim must be filed shall be tolled from the time the Contractor submits his or her written claim pursuant to Article 5.09 until the time the claim is denied, including any period of time utilized by the meet and confer conference.

**5.09.04. Civil Actions**

The following procedures are established for all civil actions filed to resolve claims:

- A. Within 60 days, but no earlier than 30 days, following the filing or responsive pleadings, the court shall submit the matter to nonbinding mediation unless waived by mutual stipulation of both parties. The mediation process shall provide for the selection within 15 days by both parties of a disinterested third person as mediator, shall be commenced within 30 days of the submittal, and shall be concluded within 15 days from the commencement of the mediation unless a time requirement is extended upon a good cause showing to the court.

- B. If the matter remains in dispute, the case shall be submitted to judicial arbitration pursuant to Chapter 2.5 (commencing with Section 1141.10) of Title 3 of Part 3 of the Code of Civil Procedure, notwithstanding Section 1141.11 of that code. The Civil Discovery Act of 1986 (Article 3 commencing with Section 2016, of Chapter 3 of Title 3 of Part 4 of Code of Civil Procedure) shall apply to any proceeding brought under this subdivision consistent with the rules pertaining to judicial arbitration.

In addition to Chapter 2.5 (commencing with Section 1141.10) of Title 3 of Part 3 of the Code of Civil Procedure, (A) arbitrators shall, when possible, be experienced in construction law, and (B) any party appealing an arbitration award who does not obtain a more favorable judgment shall, in addition to payment of costs and fees under that chapter, also pay the attorney's fees on appeal of the other party.

#### **5.10. Dust Control**

During the performance of all work under this Contract, the Contractor shall assume all responsibility for dust control and shall furnish all labor, equipment, and means required to carry out proper and efficient measures wherever and whenever dust control is necessary to prevent operations from producing dust damage and nuisance to persons and property. Any claims resulting therefrom shall be borne solely by the Contractor.

#### **5.11. Excavation Safety Plans**

Attention is directed to Section 6705 of the Labor Code concerning trench excavation safety plans. Excavations five (5) feet or more in depth shall not begin until the Contractor has submitted and the Engineer has returned indicating "In Receipt Of" the Contractor's detailed plan for worker protection from the hazards of caving ground during such excavations. The plan may be reviewed by the Engineer for completeness in accordance with federal, state, and local regulations. The Engineer will not be responsible for reviewing the accuracy of assumptions, data and information used, and procedures contained in the plan or the adequacy thereof. Such plans shall show the details of the design of shoring, bracing, sloping, or other provisions to be made for worker protection during such excavation. The plan shall not allow the use of shoring, sloping, or a protective system less effective than that required by the Construction Safety Orders; and if such plan varies from the shoring system standards established by the Construction Safety Orders, the plan (including calculations) shall be prepared, signed and stamped by an Engineer registered as a Civil or Structural Engineer, and by an Engineer registered as a Geotechnical Engineer, in the State of California.

Such plans shall be accompanied by a copy of the Permit to Excavate that has been issued by the Division of Occupational Safety and Health as required by Labor Code Section 6500 and following.

This Article shall be applicable regardless of Contract price.



**5.12. Asbestos-Related Work**

The Contractor's attention is directed to Section 7058.5 of the Business and Professions Code which states that from and after January 1, 1987, no Contractor shall engage in asbestos-related work, as defined, who is not certified by the Contractor's State License Board to do so.

The Contractor's attention is also directed to Section 6501.5, and following, of the Labor Code relative to asbestos-related work and to provisions of the General Industry Safety Orders of Title 8 of the Code of Regulations and to the BAAQMD's Regulation 11, Rule 2.

**5.13. Substitutions**

If a specific means, method, technique, sequence, or procedure of construction is indicated in or required by the Contract Documents, the Contractor may furnish or utilize a substitute means, method, sequence, technique, or procedure of construction acceptable to the Engineer, if the Contractor submits sufficient information to allow the Engineer to determine that the substitute proposed is equivalent to that indicated or required by the Contract Documents.

The Engineer will respond in writing to the Contractor within 10 days indicating the time necessary to evaluate each proposed substitute. The Engineer will be the sole judge of acceptability, and no substitute will be ordered, installed, or utilized without the Engineer's prior written acceptance, which will be evidenced by either a change order or an approved shop drawing. The District may require the Contractor to furnish at the Contractor's expense a special performance guarantee or other surety with respect to any substitute.

The Engineer will record time required by the Engineer and the Engineer's consultants in evaluating substitutions proposed by the Contractor and in making changes in the Contract Documents occasioned thereby. Regardless of whether or not the Engineer accepts a proposed substitute, the Contractor shall reimburse the District for the charges of the Engineer and Engineer's consultants for evaluating each proposed substitute.

Cost or time impacts to other items of Contract work which are caused by any Contractor initiated request for substitution, whether anticipated or unforeseen, shall be the responsibility of the Contractor.

## **SECTION 6. LEGAL RELATIONS AND RESPONSIBILITY**

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### **6.01. Laws to be Observed**

The Contractor shall remain informed of and in compliance with applicable existing and future federal, state, county, and municipal laws, ordinances, rules and regulations, including but not limited to, those cited herein.

### **6.02. Labor Discrimination**

In the performance of the Contract, the Contractor shall not discriminate against an employee or applicant for employment because of race, color, religious creed, ancestry, sex, age, national origin, physical handicap, medical condition, or marital status. Section 1735 of the Labor Code and Sections 12990 et seq. of the Government Code are incorporated herein in full by this reference.

The Contractor and each subcontractor shall submit monthly an employee utilization report, substantially conforming to U. S. Department of Labor Form CC-257 (Rev. 9/78).

### **6.03. Employment of Labor**

In the employment of labor in the performance of the Contract, the District desires that the Contractor and all subcontractors shall, wherever possible, give first consideration to residents of the District.

### **6.04. Prevailing Wages**

In accordance with provisions of Section 1773 of the Labor Code, the Director of the Department of Industrial Relations has ascertained the general prevailing rate of wages and employer payments for health and welfare, pension, vacation, and similar purposes available to the particular craft, classification, or type of workers employed on the work. These rates are set forth in the latest determination obtained from the Director, which is on file in the office of the Clerk of the Board of Directors and incorporated herein by reference the same as though set out in full.

The Contractor shall forfeit as a penalty to the District, \$50 for each day, or portion thereof, for each worker paid less than the stipulated prevailing rates for any public work done under the Contract by the Contractor or by any subcontractor in violation of the provisions of the Labor Code, particularly Sections 1770 through 1780, inclusive.

Each contractor and subcontractor shall keep an accurate payroll record, showing the name, address, Social Security number, work classification, straight time and overtime hours worked each day and week, and the actual per diem wages paid to each journeyman, apprentice, worker, or other employee by him or her in connection with the public work. The payroll records shall be certified and shall be available for inspection at all reasonable hours at the principal office of the Contractor in accordance with the provisions of Section 1776 of the Labor Code.

The Contractor shall inform the District of the location of the payroll records, including the street address, city, and county, and shall, within 5 working days, provide a notice of a change in location and address. The responsibility for compliance with payroll record

requirements imposed by said Section 1776 of the Labor Code is on the prime Contractor.

A copy of all payrolls shall be submitted weekly to the Engineer. Payrolls shall contain the full name, address, and Social Security number of each employee, his or her correct classification, rate of pay, daily and weekly number of hours worked, itemized deductions made, and actual wages paid. They shall also indicate apprentices and ratio of apprentices to journeymen. The employee's address and Social Security number need only appear on the first payroll on which his or her name appears. The payroll shall be accompanied by a "Statement of Compliance" signed by the employer or agent indicating that the payrolls are correct and complete and that the wage rates contained therein are not less than those required by the Contract. The "Statement of Compliance" shall be on forms furnished by the District or on any form with identical wording. The Contractor shall be responsible for the submission of copies of payrolls of all subcontractors.

If, by the 15th of the month, the Contractor has not submitted satisfactory payrolls for all work performed during the monthly period ending on or before the first of that month, the District will retain an amount equal to 10 percent of the estimated value of the work performed (exclusive of mobilization) during the month from the next monthly estimate, except that such retention shall not exceed \$10,000 nor be less than \$1,000. Retentions for failure to submit satisfactory payrolls shall be additional to all other retentions provided for in the Contract. The retention for failure to submit satisfactory payrolls for any monthly period will be released for payment when the monthly estimate for partial payments next following the date that all such payrolls for which the retention was made are submitted.

The Contractor and each subcontractor shall preserve their respective payroll records for a period of 4 years from the date of filing a Notice of Completion and Acceptance under the Contract.

The work of installing, assembling, repairing or reconditioning, or other work of any nature on machinery, equipment, or tools used in or upon the work, shall be considered a part of the work to be performed under the Contract and any laborers, workers, or mechanics working on such machinery, equipment, or tools, shall be subject to all of the requirements relating to labor set forth in the Contract.

The construction, erection, and operation of material production, proportioning, or mixing plants from which material is used wholly on the Contract or on contracts under the supervision of the District, shall be considered a part of the work to be performed under the Contract and any laborers, workers, or mechanics working on such plants shall be subject to all of the requirements relating to labor set forth in the Contract.

#### **6.05. Hours of Labor**

Eight hours' labor constitutes a legal day's work. The Contractor shall forfeit as a penalty to the District, \$25 for each worker employed in the execution of the Contract by the Contractor or by any subcontractor for each day during which such worker is

required or permitted to labor more than 8 hours in violation of Labor Code Sections 1810 to 1815, inclusive, except as provided for under Labor Code Section 1815.

**6.06. Apprentices**

The Contractor's attention is directed to the provisions in Sections 1777.5, 1777.6, and 1777.7 of the Labor Code concerning the employment of apprentices by the Contractor or any subcontractor.

Section 1777.5 requires the Contractor or subcontractor employing persons, as defined, in any apprenticeable occupation to apply to the joint apprenticeship committee which is nearest the site of the public works project and which administers the apprenticeship program in that trade for a certificate of approval. The certificate will also fix the ratio of apprentices to journeymen that will be used in the performance of the Contract. The ratio of work performed by apprentices to journeymen in such cases shall not be less than 1 hour to 5 hours, except when the committee finds that any one of the following conditions is met:

- A. In the event unemployment for the previous 3-month period in the project site area exceeds an average of 15 percent, or
- B. In the event the number of apprentices in training in such area exceeds a ratio of 1 to 5, or
- C. If there is a showing that the apprenticeable craft or trade is replacing at least one-thirtieth of its journeymen annually through apprenticeship training, either (1) on a statewide basis, or (2) on a local basis, or
- D. If assignment of an apprentice to any work performed under a public works contract would create a condition which would jeopardize his/her life or the life, safety, or property of fellow employees or the public at large, or if the specific task to which the apprentice is to be assigned is of such a nature that training cannot be provided by a journeyman.

The Contractor is required to make contributions to funds established for the administration of apprenticeship programs if the Contractor employs registered apprentices or journeymen in any apprenticeable trade on such contracts and if other contractors on the public works site are making such contributions.

The Contractor and any subcontractor shall comply with the requirements of Sections 1777.5 and 1777.6 in the employment of apprentices.

Information relative to apprenticeship standards, wage schedules, and other requirements may be obtained from the Director of Industrial Relations, ex officio the Administrator of Apprenticeship, San Francisco, California, or from the Division of Apprenticeship Standards and its branch offices.

**6.07. Permits and Licenses**

The Contractor shall procure all permits and licenses, pay all charges and fees, and give all notices necessary and incident to the prosecution of the work, except as provided in the Special Provisions.

**6.08. Patents and Copyrights**

The Contractor shall assume all costs including any costs of defense arising from the use of any copyrighted composition, secret process, patented or unpatented invention, article, equipment, device, or appliance manufactured, furnished, or used in the performance of the Contract, including their use by the District, unless otherwise specifically stipulated in the Specifications.

**6.09. Public Safety**

The Contractor shall furnish, erect, and maintain such fences, barriers, lights, and signs and provide such flagging and guards as are necessary in the opinion of the Engineer or public agency having jurisdiction, to give adequate warning to the public of the construction and of any dangerous condition to be encountered as a result thereof.

**6.10. Accident Prevention**

The Contractor shall comply with the California Occupational Safety and Health Act (Labor Code Section 6300 et seq.) and Title 8 of the Code of Regulations, and will also take, or cause to be taken, such additional measures as may be necessary for the prevention of accidents.

Prior to commencement of work the Contractor shall (1) submit proposals in writing for effectuating provisions for accident prevention, and (2) meet in conference with the Engineer to discuss and develop mutual understandings relative to administration of an overall safety program.

During the performance of work under the Contract, the Contractor shall institute controls and procedures for the control and safety of persons visiting the jobsite.

The Contractor shall maintain an accurate record of, and shall report to the Engineer in writing, exposure data and all accidents resulting in death, traumatic injury, occupational disease, or damage to property, materials, supplies, or equipment incident to work performed under the Contract.

The Engineer will notify the Contractor of any noncompliance with the foregoing provisions. The Contractor shall, after receipt of such notice, immediately take corrective action. If the Contractor fails or refuses to comply immediately, the matter will be referred to the proper authority. No part of the time lost due to any stop order issued by proper authority shall be made the subject or claim for extension of time or for extra costs or damages by the Contractor.

Compliance with the provisions of this Article by subcontractors will be the responsibility of the Contractor.

**6.11. Explosives and Stream Pollution**

When the use of explosives is necessary for the prosecution of the work, the Contractor shall not endanger life or property.

All explosives shall be stored in accordance with the provisions of Division XI of the Health and Safety Code and applicable county and city ordinances.

Attention is called to the necessity of obtaining a permit from the Department of Fish and Game of the State of California in advance of use of underwater explosives. Attention is directed to the Fish and Game Code relating to stream pollution, particularly Section 5650.

**6.12. Fires**

The Contractor shall obtain any necessary fire permits from the properly constituted authority and comply with all regulations of the BAAQMD.

**6.13. Interference With Fire Hydrants, Highways, and Fences**

The Contractor shall conduct operations as not to close or obstruct any portion of any highway, road, or street, or prevent in any way free access to fire hydrants until permits have been obtained therefor from the proper authorities. If any highway required to be kept open shall be rendered unsafe by the Contractor's operations, the Contractor shall make such repairs or provide such temporary guards as shall be acceptable to the authorities having jurisdiction and to the Engineer. Any highway or street maintenance or repair work required by local authorities in connection with necessary operations under the Contract shall be performed by the Contractor at the Contractor's own cost and expense. Fences subject to interference shall be maintained as effective barriers consistent with the original intent but, upon approval of the Engineer, they may be moved or rearranged to facilitate prosecution of the work until the work is finished, after which they shall be restored to their original location in an equal or better condition that existed prior to rearrangement.

**6.14. Preservation of Property**

Due care shall be exercised to avoid damage to existing improvements, utility facilities, and adjacent property, real and personal. The fact that any existing underground improvement or facility is not shown on the Drawings shall not relieve the Contractor of responsibility to ascertain the existence of any underground improvement or facility which may be subject to damage by reason of the Contractor's operations.

Any damage to improvements or property, whether above or below the ground, private or public, within or adjacent to the project limits, arising from, or in consequence of, the performance of the Contract shall be repaired at once by the Contractor. If the Engineer requires such repair to be made prior to the execution or continued performance of any

part of the work included in this Contract, the Engineer will so notify the Contractor who shall delay or discontinue the performance of that part of the work until the necessary repair has been made. Such delay shall not be considered unavoidable, and no extension of time for completion of the Contract will be allowed therefor.

When ordered by the Engineer to make any such repair, the Contractor shall start work thereon within four (4) hours and shall prosecute the same with diligence to completion. Upon failure of the Contractor to so comply with such order, or upon the Contractor's failure to make immediate emergency repairs reasonably determined by the Engineer to be necessary in the best interests of the public, the Engineer shall have authority to cause such repair to be made and to deduct the costs thereof from any money due, or which may become due, the Contractor.

In an emergency affecting the safety of life or property including adjoining property, the Contractor shall act to prevent, to the extent possible, such threatened loss or injury, whether or not instructed to do so by the Engineer.

#### **6.15. Contractor's Responsibility for Work**

Until the formal acceptance of the work, the Contractor shall have the charge and care of the work and of the materials to be used therein, and shall bear the risk of injury, loss, or damage to any part thereof by the action of the elements or from any other cause, whether arising from the execution or from the nonexecution of the work. The materials to be used in the work include both those furnished by the District and those furnished by the Contractor, including materials for which the Contractor has received partial payment as provided in Article 8.03.

#### **6.16. Indemnification**

The Contractor shall defend, indemnify and save harmless the District and its Directors, officers, employees, and agents from liability, loss, suits, actions, or claims brought for or on account of violation of laws, ordinances, rules or regulations, or injury, damage, or loss including death caused by acts or omissions of the Contractor, its employees, or agents.

#### **6.17. Contractor's Insurance**

##### **6.17.01. General**

The Contractor shall not commence work under this Contract until all insurance required by this Article has been obtained and such insurance and insurers have been approved by the District. The insurance procured by Contractor for the benefit of Santa Clara Valley Water District shall not be deemed to release or limit any liability of Contractor. Damages recoverable by Santa Clara Valley Water District for any liability of Contractor shall, in any event, not be limited by the amount of the required insurance coverage. Any delay in the commencement of work beyond the date of the first chargeable day in the Notice to Begin Work, caused by the Contractor's failure to comply with the insurance requirements specified in these Specifications, is the responsibility of the Contractor. Failure by the Contractor to maintain all required insurance at all times

during the performance of this Contract, and until acceptance by the District, shall, at the discretion of the District, result in temporary suspension of work in accordance with Article 7.05 and shall not be a basis for a time extension. Contractor's insurance shall be primary with respect to any other insurance which may be carried by Santa Clara Valley Water District.

In the event of a claim or dispute, District has the right to require Contractor's insurance to provide complete, certified copies of all required pertinent insurance policies, including endorsements affecting the coverage required by this Contract.

**6.17.02. Workers' Compensation and Liability Insurance**

Without limiting any of the other obligations or liabilities of the Contractor, the Contractor shall, at the Contractor's sole cost and expense, keep in force at all times during the performance of this Contract, and until acceptance by the District, the following minimum insurance coverages, unless otherwise specified in the Special Provisions:

- A. Workers' Compensation and Employers' Liability insurance, including coverage under United States Longshoreman's and Harbor Worker Act, when applicable, with minimum \$1,000,000 limits of Employers' Liability coverage.
- B. Commercial General Liability insurance covering all operations, including coverage for completed operations and for contractual liability (liability assumed under this Contract). The property damage portion shall include coverages for "x," "c," and "u" hazards.

Bodily Injury and Property Damage      \$2,000,000 per occurrence and aggregate

The Santa Clara Valley Water District, its Directors, officers, employees, and agents, and those entities specified in the Special Provisions, shall be named additional insureds on the Commercial General Liability insurance policy. If the standard ISO Form wording for "OTHER INSURANCE" is not contained in the Contractor's Commercial General Liability insurance policy, an endorsement must be provided that said insurance will be primary insurance and no insurance of the additional insured will be called upon to contribute to a loss.

- C. Auto Liability insurance covering use of any automobiles.

Combined Single Limit      \$1,000,000 per person and per accident

**6.17.03. Insurance on Work and Materials**

The Contractor shall secure and maintain such direct damage insurance against such perils as the Contractor may deem necessary to protect the work called for in this Contract, including work completed, material in place or to be used in the performance of this Contract, and such other miscellaneous items as may be necessary to the performance of this Contract.



**6.17.04. Certificates of Insurance**

The Contractor shall furnish certificates of insurance to the District for all required insurance coverages. The certificate for Commercial General Liability insurance shall explicitly indicate that "x," "c," and "u" coverage and contractual liability coverage are provided, even if both coverages are included in the Commercial General Liability policy form. Copies of original endorsements affecting coverage required by 6.17.02. (B) shall be included with the certificates of insurance for Commercial General Liability coverage. The certificates and endorsements are to be signed by a person authorized by the insurer to bind coverage on its behalf.

Certificates shall also provide that not less than thirty (30) days' advance written notice shall be given to the District in the event of cancellation, provided that only ten (10) days' advance written notice is necessary for cancellation for nonpayment of premium.

The Contractor shall provide its insurance broker(s)/agent(s) with a copy of these requirements and warrants that these requirements have been reviewed by Contractor's insurance agent(s) and/or broker(s), who have been instructed by Contractor to provide all required certificates of insurance and endorsements to the Unit Manager, Construction Support Unit, Santa Clara Valley Water District, 5750 Almaden Expressway, San Jose, CA 95118.

Upon request by the District, the Contractor shall also furnish a certified copy of any or all policies of insurance covering the work called for in this Contract.

**6.18. Payment of Taxes**

Except as otherwise specifically provided in the Special Provisions, the Contract prices shall include full compensation for all current and future taxes which the Contractor is required to pay, whether imposed by federal, state, or local government, and no tax exemption certificate or any other document designed to exempt the Contractor from payment of tax will be furnished to the Contractor by the District.

**6.19. Cooperation With Others**

The District reserves the right to do other work on or near the project. The Contractor shall cooperate with others and conduct work so as to facilitate work by the District or others and prevent delay, additional expense, or hindrance thereto. The Contractor shall request from, and exchange with others, Drawings, data, and information as necessary to insure proper completion of the project and work of others. The Contractor shall furnish copies of correspondence and Drawings exchanged with other contractors to the Engineer.

The Contractor shall conduct, adjust, correct, and coordinate work with work of others so that the project shall be free of defects.

**6.20. Property Rights in Materials**

Nothing in the Contract shall be construed as vesting in the Contractor any right of property in the materials used after they have been attached or affixed to the work or the soil, or after payment has been made for 90 percent of the value of materials delivered to the site of the work, whether or not they have been so attached or affixed. All such materials shall become the property of the District upon being so attached or affixed or upon payment of such 90 percent of the value of materials delivered by the Contractor on the ground and not used, as provided in Article 8.03.

**6.21. Rights in Land and Improvements**

Nothing in these Specifications shall be construed as allowing the Contractor to make any arrangements with any person to permit occupancy or use of any land, structure, or building within the limits of the Contract for any purpose whatsoever, either with or without compensation, in conflict with any agreement between the District and any owner, former owner, or tenant of such land, structure, or building.

**6.22. Title to Materials Found on the Work**

The title to all water and to the right to the use of all water, to all soil, stone, gravel, sand, minerals, and all other materials developed or obtained in the excavation or other operations by the Contractor or any subcontractor, or any of their employees, and the right to use or dispose of the same, are hereby expressly reserved by the District, and neither the Contractor, nor any subcontractor, nor any of their employees shall have any right, title, or interest in, or to any part thereof; neither shall they, nor any of them, assert or make any claim thereto. The Contractor may be permitted to use in the work, without charge, any such materials which meet the requirements of these Specifications.

**6.23. Trespass**

The Contractor shall be responsible for all damage or injury which may be caused on any property by trespass by the Contractor, any subcontractor, or their employees in the course of their employment, whether the said trespass was committed with or without the consent or knowledge of the Contractor.

**6.24. Subcontracting**

The Contractor shall comply with Subletting and Subcontracting Fair Practices Act commencing with Section 4100 of the Public Contract Code. Violations shall subject Contractor to penalties described in the Act.

In accordance with Section 4107 of the Public Contract Code, the Designated Engineer is an authorized officer to act for the Board for the purposes of consenting to a substitute subcontractor.

**6.25. Tunnel Construction Safety**

Attention is directed to Labor Code Sections 7950 and following, concerning tunnel safety. The Contractor shall notify the Division of Occupational Safety and Health and the Engineer before any initial construction may be started at any tunnels. A prejob safety conference, to be arranged for by the Contractor, shall be held for all underground operations. The Engineer shall be notified of the time and place of such conference. The tunnel classification prepared by the Division of Occupational Safety and Health shall be prominently posted at the site by the Contractor. The District will obtain this classification prior to the request for bids, whenever possible, and make it available to the Contractor.

**6.26. Burial Sites**

Pursuant to Ordinance Code Section B6-18 of the County of Santa Clara and requirements of Public Resources Code Section 5097.94 and Health and Safety Code Section 7050.5, upon discovering or unearthing any burial site as evidenced by human skeletal remains, the person making such discovery shall immediately notify the County Coroner. The Contractor shall also notify the Engineer. The Contractor shall immediately secure the site and protect any human remains from further disturbance.

Upon determination by the County Coroner that the remains are Native American, the Coroner will contact the California Native American Heritage Commission and the County Coordinator of Indian Affairs. No further excavation or disturbance within 30 feet of the site or of any nearby area reasonably suspected to overlie adjacent remains may be made except as authorized by the California Native American Heritage Commission and/or the County Coordinator of Indian Affairs.

The Contractor is advised that if burials are encountered, it may be necessary to suspend work on the project in order to comply with the above requirements. Payment for a delay of more than 1 working day for each occurrence will be made in accordance with Article 5.04 and Article 5.05.

**6.27. Assignment of Antitrust Claims**

Sections 4550 through 4554 of the Government Code pertaining to the assignment of antitrust claims are incorporated herein in full by this reference.

**6.28. Delay Due to Archeological Discovery**

The Contractor is advised that if archeological artifacts are encountered, it may be necessary to suspend work on the project in order to comply with this Article.

Work in areas where artifacts are found shall be restricted or stopped as directed by the Engineer until proper protocols are met.

Work at the location of the find shall halt immediately within 30 feet of the find. If an archaeologist is not present at the time of the discovery, the Engineer will contact an archaeologist for identification and evaluation pursuant to Section 21083.2 of the Public

Resources Code, Section 15126.4 of the California Code of Regulations (California Environmental Quality Act [CEQA] Guidelines), and the mitigation measures of the project CEQA document. If the archaeologist determines that the artifact is not significant, the Engineer will authorize the Contractor to resume construction.

If the archaeologist determines that the artifact is significant, the archaeologist will determine if the artifact can be avoided and, if so, will detail avoidance procedures. The Contractor shall comply with these avoidance procedures.

If the artifact cannot be avoided, the archaeologist will develop within 48 hours an Action Plan which will include provisions to minimize impacts and, if required, a Data Recovery Plan for recovery of artifacts in accordance with Public Resources Code Section 21083.2 and Section 15126.4 of the CEQA Guidelines.

The Contractor shall delay work until the Action Plan and, if required, the Data Recovery Plan, are approved by the Engineer. Once the Action Plan and the Data Recovery Plan are approved, the Contractor shall comply with the requirements of these plans.

Payment for a delay of more than 1 working day for each occurrence will be made in accordance with Article 5.04 and 5.05.

## **SECTION 7. PROSECUTION AND PROGRESS OF WORK**

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### **7.01. Assignment**

The performance of the Contract may not be assigned except upon the written consent of the Board of Directors. Consent will not be given to any proposed assignment which would relieve the original Contractor or surety of their responsibilities under the Contract.

The Contractor may assign moneys due, or to become due under the Contract, and such assignment will be recognized by the District, if given proper notice thereof, to the extent permitted by law, but any assignment of moneys shall be subject to all proper setoffs in favor of the District and to all deductions provided for in the Contract and particularly all money withheld, whether assigned or not, shall be subject to being used by the District for the completion of the work in the event that the Contractor should be in default therein.

### **7.02. Notice to Begin Work**

The Notice to Begin Work will be issued by the Designated Engineer within 10 days after receipt of the Agreement and Contract Bonds included herein signed by the successful bidder. Reference is made to Article 4.04.

### **7.03. Commencement of Work**

The Contractor shall not begin work until receipt from the District of the Notice to Begin Work, and shall, upon receiving notice, begin work within the time specified in the notice. The time specified in said notice will allow a period of at least 10 days after the date of said notice for commencement of work. After receipt of said notice, the Contractor shall diligently prosecute the work to completion. The Contractor shall provide, at least 24 hours in advance, written notice to the Engineer of the Contractor's intention to start work and specify the date on which the Contractor intends to start.

No work shall begin until the bonds and certificates of insurance required by Articles 4.03 and 6.17 have been received and approved.

### **7.04. Work Progress Schedule**

If required by the Special Provisions, the bidder to whom the Contract is awarded shall, prior to execution of the Contract, submit a practicable work schedule to the Engineer, showing the order and dates within which the Contractor proposes to carry out the work.

If required by the Engineer, the Contractor shall submit supplementary work progress schedules to indicate approximately the percentage of work scheduled for completion at any time.

The progress schedule and supplementary progress schedules submitted shall be consistent, in all respects, with the time requirements of the Contract.

**7.05. Temporary Suspension of Work**

By written order to the Contractor, the Engineer may suspend the work wholly or in part for an indefinite period, or for such period as the Engineer may deem necessary, for any of the following reasons:

- A. Weather conditions or other conditions which are unfavorable for the proper prosecution of the work;
- B. Failure of the Contractor to carry out orders given or to perform any provisions of the Contract; or
- C. The convenience and benefit of the District.

Such suspension shall be effective upon receipt by the Contractor of the written order suspending the work and shall be terminated upon receipt by the Contractor of the written order terminating the suspension.

If, under authority of (A) or (C) above, the Engineer orders a suspension of all or a portion of the work which is the current controlling operation, it will be cause for a time extension if it affects the controlling item of work.

**7.06. Liquidated Damages**

In case all the work called for under the Contract in all parts and requirements is not finished or completed within the number of days as set forth in the Special Provisions, it is agreed that damage will be sustained by the District, and that it is and will be impracticable and extremely difficult to ascertain and determine the actual damage which the District will sustain in the event of and by reason of such delay; and it is, therefore, agreed that the Contractor will pay to the District the sum set forth in the Special Provisions per day for each and every day's delay in finishing the work in excess of the number of days prescribed; and the Contractor agrees to pay said liquidated damages herein provided for, and further agrees that the District may deduct the amount thereof from any moneys due, or that may become due, to the Contractor under the Contract.

**7.07. Termination of Control**

Failure to supply an adequate working force or material of proper quality, or in any other respect to prosecute the work with the diligence and force specified by the Contract, is grounds for termination of the Contractor's control over the work and for taking over the work by the District.

**7.08. Termination of Contract**

The District may terminate the Contract at any time upon a determination that the same is in the best interests of the District. Upon such termination, the rights, duties, and obligations of the parties shall be as stated in Section 8-1.11 of the State Specifications,

wherein the words "Director" and "Engineer" shall mean the Engineer, and the words "State" and "Department" shall mean District.

**7.09. Contractor's Cost Data**

The District or any of its duly authorized representatives shall, until the expiration of 4 years after filing the Notice of Completion and Acceptance under this Contract or any subcontract under it, have access to and the right to examine any of the Contractor's or subcontractor's payrolls, records of personnel, invoices of materials, records of plant and equipment costs, and any and all other directly pertinent books, documents, papers, and records of such Contractor or subcontractors, involving transactions related to said Contract or subcontracts. In the event State or Federal funds are involved in the financing of the project, the State or Federal Government shall have the same rights of inspection as the District.

**7.10. Coordination With Utilities**

In general, the location of existing utility facilities as shown on the Drawings is approximate. This information has been obtained from utility maps furnished by the various agencies involved, and the District does not guarantee either the correctness of locations or the extent of such locations.

Service laterals, such as house sanitary, water, electrical, gas, cable TV, storm or telephone cables, or appurtenances, may not all be shown on the Drawings. Section 4215 of the California Government Code does not require public agencies to indicate the presence of service laterals or appurtenances whenever the presence of such utilities can be inferred from the presence of other visible facilities, such as buildings, meter boxes, or junction boxes, on or adjacent to the construction site. No changes in the Contract price or Contract time will be made due to the presence of unidentified or incorrectly located service laterals or appurtenances. It shall be the responsibility of the Contractor to ascertain the exact location of the utility facilities.

Unless otherwise indicated on the Drawings or specified in the Specifications, the Contractor shall maintain in service all utilities including house services, power, lighting, and telephone conduits, and any other surface or subsurface structure or facility of any nature that may be affected by the work; provided, however, that the Contractor, for convenience, may arrange with the owner to temporarily disconnect house service lines or other facilities along the line of the work. The cost of disconnecting and restoring such utilities shall be borne by the Contractor.

In the event that a main or trunk line utility facility is encountered which interferes with the work and is neither shown on the Drawings nor specified in the Specifications, the Contractor shall immediately notify the District in writing. The District will either have the appropriate utility company or public agency relocate the facility, or the District will direct the Contractor to relocate the facility in accordance with Article 5.03, Change in Work.

In the event that a main or trunk line utility facility is encountered which interferes with the work and which the Contractor believes is not shown on the Drawings or indicated in the Specifications with reasonable accuracy, the Contractor shall immediately notify the

District in writing. Reasonable accuracy is defined as being within the tolerances noted on the Drawings. If the Engineer determines that the main or trunk line utility facility was shown on the Drawings or indicated in the Specifications with reasonable accuracy, the Contractor shall be solely responsible for relocation or removal, and no additional time will be granted nor will additional compensation be made for any additional work required. If the Engineer determines that the main or trunk line utility facility was not shown on the Drawings or indicated in the Specifications with reasonable accuracy, the District will either have the appropriate utility company or public agency relocate the facility, or the District will direct the Contractor to relocate the facility in accordance with Article 5.03, Change in Work.

When a delay in the completion of the project is caused by the failure of the District or the owner of a utility facility to provide for removal or relocation of existing main or trunk line utility facilities which are not shown on the Drawings or indicated in the Specifications, or which are not shown on the Drawings or indicated in the Specifications with reasonable accuracy, the Contract time will be extended in accordance with Article 5.05, Change of Contract Time.



## SECTION 8. MEASUREMENT AND PAYMENT

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### 8.01. Measurement of Quantities

All work except work based on time and materials will be paid for at a contract price per unit of measurement and will be measured by the Engineer in accordance with the United States Standard Measures. Unless otherwise specifically provided, the Engineer will compute quantities by a method which, in the Engineer's opinion, is best suited to obtain an accurate determination. The weights of metalwork, pipe, and other metal parts to be paid for on the basis of weight, will be determined by the Engineer. The District will not provide scales for weighing material. The Engineer will determine the weight of each part or item in the most practicable manner and will use for that purpose manufacturer's weights, or in their absence, catalog weights or estimated weights, in that order; provided, that weights of nonmetallic coatings will be excluded.

### 8.02. Deductions From Payments

The District may, at its option and at any time, retain out of any amounts due the Contractor, sums sufficient to cover claims, filed pursuant to Section 3179 et seq. of the Civil Code.

### 8.03. Partial Payment

On the 25<sup>th</sup> of each month the Contractor will prepare and submit to the District an estimate in writing of the total amount of work done and the acceptable materials furnished and delivered by the Contractor in the jobsite and not used, to the time of such estimate, and the value thereof. Each progress pay request is to include payment for work completed up to and including the 25<sup>th</sup> of the month. Acceptable materials shall be those materials which will become a part of the finished construction work. The basis for partial payments of lump sum or other unit Contract items will be determined by agreement between the Engineer and the Contractor.

Payment requests shall be submitted on an approved Contractor **Monthly Progress Pay Estimate Summary** sheet. The pay request submitted by the contractor shall contain a source document which provides back-up information on how the estimate was prepared. A source document is defined as the basic document used to record or calculate quantities. The source document must contain the appropriate Contract Bid Item, the location of the installation, the necessary measurement and/or calculations, and the name of the person preparing the document. Request for payment of work performed on extra work shall be accompanied by the **Daily Extra Work Report Form FC204w**. The form shall be signed by both the District inspector and the contractor's representative.

- A. Upon receipt of a payment request, the District shall review the payment request for the purpose of determining that the payment request is a proper payment request. Any payment request determined not to be a proper payment request suitable for payment shall be returned to the Contractor no later than seven days, after receipt. A payment request returned pursuant to this paragraph shall be accompanied by a letter citing the reasons why the payment request is not proper. The following are examples of an improper payment request:

1. The item of work requested to be paid was not performed.
  2. The work being requested to be paid has already been paid in previous Progress Pay Estimates.
  3. The work performed and requested to be paid was not done in accordance with the contract (non-compliance).
  4. The quality of the finished product is unacceptable.
  5. The source documentation is inaccurate.
  6. The Daily Extra Work Reports (for extra work) are not properly filled out.
- B. If the District fails to make any progress payment within 30 days after receipt of an undisputed and properly submitted payment request from the Contractor the District shall pay interest to the Contractor equivalent to the legal rate set forth in subdivision (a) of Section 685.010 of the Code of Civil Procedure.
- C. The number of days available to the District to make a payment without incurring interest pursuant to this section shall be reduced by the number of days by which the District exceeds the seven-day return requirement set forth in paragraph A.

The District shall retain 10 percent of such estimated value of work done and 10 percent of the value of the materials so estimated to have been furnished and delivered and unused as aforesaid, and shall pay to the Contractor, while carrying on the work, the balance not retained as aforesaid, after deducting therefrom all previous payments and all sums to be kept or retained under the provisions of the Contract. However, at any time after 50 percent of the work has been completed, the contractor may request in writing that progress payments be made in full and no further retainage withheld. If the District finds that satisfactory progress has been made, the District may make any remaining progress payments in full for actual work completed, or may withhold any amount up to 10 percent thereof, as the District may find appropriate, based on the contractor's progress. No such estimate or payment shall be required to be made when, in the judgment of the Engineer, the work is not proceeding in accordance with the provisions of the Contract, or when, in the Engineer's judgment, the total value of the work done since the last estimate amounts to less than \$1,000. No such estimate or payment shall be considered to be an acceptance of any defective work or improper materials. All progress estimates and payments shall be subject to correction in the final estimate.

At the request of the Contractor, the District will permit the substitution of securities or certificates of deposit equivalent to the amount of any monies withheld by the District as above provided. The deposit shall, in that event, be with the District, or with a state or federal chartered bank in California as the escrow agent.

Alternatively, on written request of the Contractor, the District will make payments of the retention as it is earned directly to the escrow agent.

- D. The Contractor shall bear the expense of the District and the escrow agent in connection with the escrow deposit made.
- E. Securities or certificates of deposit to be placed in escrow shall be subject to approval of the District and, unless otherwise permitted by the escrow agreement, shall be of a value of at least equivalent to the amounts of retention to be paid to the Contractor pursuant to this Section.
- F. When the District makes payment of retentions directly to the escrow agent, the Contractor may direct, subject to approval of the District, the investment of the payments into securities.
- G. The Contractor shall enter into an escrow agreement satisfactory to the District, which agreement shall be substantially similar to that specified in Section 22300 of the Public Contract Code.
- H. The Contractor shall obtain the written consent of the surety to such agreement.

**8.04. Final Payment**

As soon as practicable after completion of the work, the Engineer will prepare in writing and furnish to the Contractor the final estimate of the quantities of work done and all payments due under the Contract, which estimate will show deductions for prior payments and any other amounts to be retained under Article 8.02. The amount determined due, less the amount retained, will be paid. This retained amount will not be due or payable until 35 days after the completion of the work and the filing of Notice of Completion and Acceptance in the manner provided by law, and until after the Contractor has furnished the District a release of all claims by the Contractor against the District arising by virtue of this Contract, except such claims in definite amounts as the Contractor may specifically exempt from the operation of the release and the furnishing of any guaranty required by Article 3.11.

**8.05. Scope of Payment**

Payment for all items of work at the unit or lump sum price shall be considered as full compensation for furnishing all labor, materials, tools, equipment, and incidentals necessary to complete the item of work, and no additional allowance will be made therefor.

Payment for items of work which are called for in the Specifications or shown on the Drawings but which are not separately identified in the Proposal form shall be compensated as part of the bid price of one or more of the items which are listed, and no additional allowance will be made therefor.

**8.06. Acceptance of Final Payment Constitutes Release**

Acceptance by the Contractor of final payment constitutes and shall be a release by the Contractor of all claims against the District, except disputed contract claims in stated amounts specifically excepted in writing.

## **SECTION 9. CONTROL OF WORK**

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### **9.01. Authority of Engineer**

The Engineer shall decide all questions which may arise as to the quality or acceptability of materials furnished and work performed and rate of progress of the work, all questions which may arise as to the interpretation of the Drawings and Specifications, and all questions as to the acceptable fulfillment of the Contract on the part of the Contractor. The Engineer's decision shall be final. The Engineer shall have authority to enforce and make effective such decisions and orders which the Contractor fails to carry out promptly.

### **9.02. Submittals to be Furnished by the Contractor**

The Drawings listed in the Specifications shall be supplemented by the Contractor with such submittals as may be required for the prosecution of the work and approval of equipment. Submittals may include shop detail drawings, fabrication drawings, falsework and formwork drawings, pipe layouts, and similar classes of drawings, calculations, specifications, product data, samples, manuals, spare parts, photographs, survey data, schedules, or similar items required to be submitted to the Engineer by the Contract Documents. These submittals shall be approved by the Engineer before any work involving these submittals is performed. No change shall be made by the Contractor to any submittal after it has been approved by the Engineer. Submittals shall contain all required detailed information at a reasonable scale with enough views to clearly show the work to be done or the item to be furnished, and shall be properly checked.

It is expressly understood, however, that approval of the Contractor's submittals shall not relieve the Contractor of any responsibility for accuracy of dimensions and details, or for mutual agreement of dimensions and details. The Contractor shall be solely responsible for agreement and conformity of submittals with the Contract Drawings and Specifications.

The sequence of submission of submittals shall be such that all information is available to the Engineer for review of each submittal as it is received. Five copies of each submittal shall be submitted. For submittals that require approval, one copy will be returned to the Contractor marked "No Exceptions," "Approved as Noted," "Revise and Resubmit," or "Rejected" within 20 days after receipt. The Contractor shall make any necessary corrections and revisions to returned submittals and shall resubmit the submittals within 20 days after receipt. For items that are required to be submitted to the Engineer but which do not require approval, one copy will be returned to the Contractor marked "In Receipt Of." The Contractor is responsible for furnishing submittals in sufficient time for approval action, including resubmittal, without delaying construction.

Beginning with the second resubmittal, the Contractor shall reimburse the District for the charges of the Engineer, and/or Engineer's consultant, for evaluating resubmittals. The charges shall be based on actual review hours recorded by the Engineer. The hourly rate of the Engineer, and/or Engineer's consultant, shall be the actual wages multiplied by an overhead rate specified in the Special Provisions.

For items that are required to be submitted to the Engineer but which do not require approval, one copy will be returned to the Contractor marked "In Receipt Of."

**9.03. Drawings and Data to be Furnished by the District**

The District may issue supplemental Drawings for the construction work under the Contract. These Drawings will show additional details as required for construction purposes. Installation instructions for District-furnished materials will be furnished if required.

**9.04. Superintendence**

The Contractor shall designate, in writing before starting work, an authorized representative who shall have complete authority to represent and act for the Contractor. Said authorized representative of the Contractor shall normally be present at the site of the work at all times while work is actually in progress on the Contract. During any period when work is suspended, arrangements acceptable to the Engineer shall be made for any emergency work which may be required.

Whenever the Contractor or an authorized representative is not present on any part of the work where it may be desired to give direction, orders will be given by the Engineer, which shall be received and obeyed by the superintendent who may have charge of the particular work in reference to which the orders are given. Any order given by the Engineer, not otherwise required by the Specifications to be in writing, will, on request of the Contractor, be given or confirmed by the Engineer in writing.

The Contractor shall designate, in writing, the names and telephone numbers of at least three representatives who could be contacted at any time in the event that an emergency occurs.

**9.05. Character of Workers**

Any subcontractor, or person employed by the Contractor or subcontractor, who fails or refuses to carry out the directions of the Engineer, or appears to the Engineer to be incompetent or to act in a disorderly or improper manner, shall be removed from the work immediately on the written request of the Engineer, and such person shall not again be employed on the work.

**9.06. Layout of Work and Surveys**

The Engineer will establish lines and grades required for proper execution of the work. The Contractor shall, without additional cost to the District, give such assistance and provide such drill holes, forms, ladders, spikes, nails, and lights as may be required by the Engineer in establishing lines and grades. The Contractor shall adjust construction operations at such points and for such reasonable time as may be necessary to assist with the work of transferring lines and marking points for line and grade.

The District will provide only the minimum of survey crew services essential to orderly performance of the work, and District survey crews will not be available at all times for the work under these Specifications.

When the Contractor requires stakes or marks, the Engineer shall be notified of such requirements a reasonable length of time in advance of starting operations that require such stakes or marks. In no event shall a notice of less than 2 working days be considered a reasonable length of time.

Where construction operations require removal of the District's stakes or other survey marks, the Contractor shall reference such points in an approved manner. Survey stakes or marks established by the District shall be preserved by the Contractor until their removal is authorized, and in the case of their unauthorized destruction or removal by the Contractor's forces, they will be replaced at the Contractor's expense. Any cost to the District of replacing survey stakes or marks will be deducted from payments due the Contractor. Such cost will include a reasonable charge for use of District supplies, labor and equipment, plus overhead.

#### **9.07. Inspection**

The Engineer shall at all times have access to the work during its construction, and shall be furnished with every reasonable facility for ascertaining that the materials and the quality of performance are in accordance with the requirements and intentions of the Drawings and Specifications. All work done and all materials furnished shall be subject to the Engineer's inspection and approval.

The day-to-day inspection performed by the various inspectors employed by the District shall not constitute approval or ratification of work improperly done by the Contractor. The Engineer is the only person authorized to recommend acceptance or rejection of work and materials.

The presence or absence of an inspector during performance of the work shall not relieve the Contractor of any obligation to fulfill the Contract. It shall be the duty of the Contractor to see that all provisions are complied with in detail, irrespective of the inspection given the work during its progress by the Engineer or representatives of the Engineer. Any plan or method suggested to the Contractor by the Engineer or an inspector, but not specified or required, if adopted or followed in whole or in part, shall be used at the risk and responsibility of the Contractor; and the District and the Engineer will assume no responsibility therefor.

Should it be considered necessary or advisable by the District at any time before acceptance of the entire work to make an examination of work already completed by removing or tearing out same, the Contractor shall, on request, promptly furnish all necessary facilities, labor, and material. If such work is found to be defective or nonconforming in any material respect, due to the fault of the Contractor or subcontractors, the Contractor shall defray all the expenses of such examination and of satisfactory reconstruction. If, however, such work is found to meet the requirements of the Contract, an equitable adjustment shall be made in the Contract price to compensate the Contractor for the additional services involved in such examination and

reconstruction and, if completion of the work has been delayed thereby, the Contractor shall, in addition, be granted a suitable extension of time.

Projects financed in whole or part with federal or state funds shall be subject to inspection at all times by the federal or state agency involved.

**9.08. Defective and Unauthorized Works**

All work which has been rejected shall be remedied or removed and replaced by the Contractor in an acceptable manner at no additional cost to the District.

Payment will not be made for any work done beyond the lines and grades shown on the Drawings or established by the Engineer, or any extra work done without written authority, and such work will be considered as unauthorized. Work so done may be ordered remedied, removed, or replaced.

If the Contractor should fail to comply promptly with any order of the Engineer made under the provisions of this Article, the Engineer may cause rejected or unauthorized work to be remedied, removed, or replaced, and the costs thereof to be deducted from any moneys due or to become due the Contractor.

**9.09. Construction Equipment and Plant**

The Contractor shall provide and use construction equipment and plant capable of producing the quality and quantity of work required. Construction equipment shall be identified by readily visible numbers. If ordered, Contractor shall remove unsatisfactory construction equipment and discontinue the operation of unsatisfactory plants.

**9.10. Final Inspection and Acceptance of Work**

When the work authorized by the Contract has been completed, the Engineer will make the final inspection. If the Engineer determines that the work has been completed, in accordance with the Contract, the Engineer will recommend that the work be accepted. The Contractor will be relieved of the responsibility imposed by Article 6.15 on the date of acceptance.

**9.11. Use Prior to Acceptance**

The District may take possession of, and use, all or part of the project prior to acceptance.

## **SECTION 10. CONTROL OF MATERIALS AND INSTALLED EQUIPMENT**

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### **10.01. Furnishing and Quality of Materials and Equipment**

Contractor shall furnish materials and equipment as specified.

Only materials and equipment conforming to the requirements of the Contract shall be incorporated in the project. Except as otherwise specified or approved, materials and equipment shall be new and unused.

### **10.02. Source of Materials and Equipment**

The Contractor shall furnish a list of sources of materials and equipment to the Engineer on a District form in sufficient time to permit proper inspection and testing of materials and equipment in advance of their use. Inspection and tests will be made and reports rendered, but it is understood that such inspections and tests shall not be considered as a guarantee of acceptance of any material or equipment which may be delivered later for incorporation in the work. No equipment or materials which, after approval, have in any way become unfit for use, shall be used in the work.

At the option of the Engineer, the source of supply of each of the materials shall be approved before the delivery is started. All materials proposed for use may be inspected or tested at any time during their preparation and use. After trial, if it is found that sources of supply which appeared satisfactory do not furnish a uniform product, or if the product from any source proves unacceptable at any time, the Contractor shall furnish approved material from other sources.

### **10.03. Product Data and Samples**

The Contractor shall submit five copies of approval data for materials and equipment proposed for installation. Approval data shall consist of complete material and equipment lists accompanied by catalog data sheets, cuts, performance curves, diagrams, or similar descriptive material. Material and equipment lists shall give, in each case, the name of the manufacturer, trade name, catalog reference, size, finish, and all other pertinent data. It is intended that approval data should not include such materials as small pipe and small pipe fittings, conduit and conduit fittings, or tubing. The Contractor shall furnish operation and maintenance manuals or instructions if required by the Special Provisions.

The Contractor shall furnish without charge such samples as may be required.

### **10.04. Storage of Materials and Equipment**

Materials and equipment shall be so stored as to ensure the preservation of their quality and fitness for the work. They shall be placed under cover when necessary and shall be stored in a manner that will facilitate prompt inspection.



**10.05. Defective Materials**

All materials not conforming to the requirements of the Contract shall be considered as defective and all such materials shall be rejected, whether in place or not. They shall be removed immediately from the site of the work, unless otherwise permitted by the Engineer. No rejected material, the defects of which have been subsequently corrected, shall be used unless approval in writing has been given by the Engineer. If the Contractor should fail to comply promptly with any order of the Engineer made under the provisions of this Article, the Engineer may cause defective materials to be removed and replaced, and the costs thereof to be deducted from moneys due, or to become due, the Contractor.

**10.06. Trade Names and Alternatives**

For convenience in designation on the Drawings or in the Specifications, certain equipment or materials to be incorporated in the work may be designated under a trade name, or the name of a manufacturer, and catalog information followed by the words "or equal."

Whenever the Drawings or Specifications allow the use of alternative equipment or materials, the burden of proof as to the comparative quality or suitability of alternative equipment or materials shall be upon the Contractor who shall furnish, at the Contractor's own expense, three (3) copies of the complete description, information, and performance data showing the equality of the materials or equipment offered to those specified, and such other necessary or related information as may be required by the Engineer. The Engineer will be sole judge as to the comparative quality and suitability of alternative equipment or materials and such decision shall be final.

The Contractor, pursuant to Public Contract Code, Section 3400, shall have at least 35 days after award of the Contract for submission of data substantiating a request for a substitution of an "or equal" item.

Cost or time impacts to other items of Contract work which are caused by any Contractor-initiated request for substitution, whether anticipated or unforeseen, shall be the responsibility of the Contractor.

**10.07. Testing Materials**

Unless otherwise specified in the Special Provisions or Technical Provisions or called for on the Drawings, the work shall be tested by the District or its authorized representative in order to determine compliance with the Drawings and the Specifications.

Whenever a reference is made to a specification or test designation, whether of the American Society of Testing Materials, the American Water Works Association, or any other authority, and the number accompanying the specification or test method representing the year of its acceptance or adoption is omitted, the reference shall mean the specification of test method in effect on the date of the Notice to Prospective Bidders.

Whenever said specification or test designation provides for test reports (such as certified mill test reports) from the manufacturer, copies of such reports, identified as to the lot of material, shall be furnished to the Engineer. The manufacturer's test reports shall supplement the inspection, sampling, and testing provisions, and shall not constitute a waiver of the District's right to inspect.

**10.08. Plant Inspection**

Materials and equipment which become a part of the completed work will be subject to inspection at the place of production or manufacture, at the shipping point, or at the site of the work. Materials and equipment requiring inspection at the place of production or manufacture will be designated by the Engineer. Where plant inspection is so designated, the Engineer shall be given 14 days' advance notice of the start of manufacture or production. The Contractor's purchase orders for materials and equipment, for which plant inspection has been designated by the Engineer, shall bear a suitable notation advising suppliers and subcontractors of inspection requirements.

The Engineer or an authorized representative shall have free entry at all times to such parts of the plant as concerns the manufacture or production of materials and equipment for the District. Adequate facilities shall be furnished free of charge to make the necessary inspection.

The District assumes no obligation to inspect materials or equipment at the place of manufacture or production, or at the shipping point.

**10.09. District-Furnished Materials**

Materials furnished by the District will be available at locations designated in the Special Provisions. They shall be loaded, unloaded, and hauled to the site of the work by the Contractor at the Contractor's expense. The Contractor shall be held responsible for all materials furnished, and shall pay all demurrage and storage charges.

## **SECTION 11. DELETED**

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## **SPECIAL PROVISIONS**

# **SPECIAL PROVISIONS**

## **SECTION 12. SCHEDULE OF WORK**

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### **12.01. Time of Work**

The Contractor shall complete all work required under this Contract, which includes the Installation Phase and the Plant Establishment Phase, as defined below, before the expiration of 625 calendar days from the First Chargeable Day of the Contract as stated in the Notice to Begin Work. The Contractor shall complete all work required for the Installation Phase before the expiration of 260 calendar days from the First Chargeable Day of the Contract. The Contractor shall complete all work required for the Plant Establishment Phase before the expiration of 365 calendar days from the date of completion of the Installation Phase.

#### **12.01.01. Excusable Inclement Weather Delays**

The time of work, for both the Installation Phase and the Plant Establishment Phase, is based upon the inclusion of 20 days of excusable inclement weather.

Contractor's attention is directed to Article 5.05.02, "Extension of Time for Delay Due to Excusable Inclement Weather."

#### **12.01.02. Inspection and Acceptance of Work**

Work required under this Contract includes both an Installation Phase for both architectural work and landscaping work, as well as a Plant Establishment Phase. The architectural work includes all work required to complete the installation of metal screens, ornamental steel fence, entry gate operator, guard house, site lighting and other associated work as shown on the Drawings and specified in these Specifications. The landscaping installation work includes all work required to complete the installation of landscape, planting, hydroseeding, irrigation system, and other associated work as shown on the Drawings and specified in these Specifications.

##### **A. Inspection and Acceptance of Installation Phase**

At the completion of the landscaping installation and architectural work, the Engineer will conduct an inspection of the work in accordance with Article 9.10. If the Engineer determines that the work has been completed per the Contract, the Engineer will recommend that the work be accepted and that the Contractor be relieved of the responsibility related to such work, with the exception of the maintenance of the landscaping in the Plant Establishment Phase as defined under Section 02900.

Partial and final payment for the Installation Phase will be made in accordance with Articles 8.03 and 8.04 of these Specifications.

##### **B. Inspection and Acceptance of Plant Establishment Phase**

At the completion of the one-year Plant Establishment Phase, the Engineer will conduct inspection of the landscaping work in accordance with Article 9.10. If the

Engineer determines that the landscaping work is complete in accordance with the Contract, the Engineer will recommend that the work be accepted and that the Contractor be relieved of the responsibility related to such work.

Partial and final payment for the landscape work will be made in accordance with Articles 8.03 and 8.04 of these Specifications.

**12.02. Schedule of Work**

Except as provided for in these Specifications, the Contractor shall arrange the sequence of operations in prosecuting the major division of work. Once work has begun it shall proceed in a manner in accordance with the accepted schedule.

**12.02.01. Preliminary Schedule of Work**

Within 21 days of the date of the Contract, the Contractor shall submit to the Engineer a Preliminary Schedule of Work. This schedule shall be a graphic bar diagram showing the planned contract work operations during the first 45 days of the Contract.

**12.02.02. Schedule of Work—CPM Schedule**

Within 35 days of the first chargeable day of the Contract, as specified in the Notice to Begin Work, the Contractor shall submit a Detail Schedule of Work. The Detail Schedule of Work shall be a Critical Path Method (CPM) schedule which represents the planned order of significant activities to complete the work within the time specified in Article 12.01. The CPM schedule shall be presented in sufficient detail such that the sequence and interdependence of activities of the project can be identified.

The CPM schedule shall account for all on site and off site activities such as, but not limited to design, procurement, fabrication, and delivery; submission of working drawings, data, samples or other items required of the Contractor; and the review, resubmittal, and approval of those items. All target dates or staging specified inherent to the project shall be included in the activities. Activities for each designated portion of the work shall be identified by separate sub-networks interconnected with the basic network diagram.

The schedule shall be a fully legible, calendar time scaled, network diagram in the form of Activities on the Arrow Diagram Method (ADM) or Precedence Diagram Method (PDM). The activities shall describe, in detail what is to be accomplished and where, the number of working days allocated for the activity, and identify the resources to be used. A legend and code may be used to show that an activity is to be performed in whole or part by a subcontractor.

The following information shall be furnished as a minimum for each activity:

- a. Preceding and succeeding activities
- b. Activity description
- c. Estimated duration of activity
- d. Earliest start date (by calendar date)
- e. Earliest finish date (by calendar date)

- f. Actual finish date(by calendar date)
- g. Slack or float
- h. Percentage of activity completed
- i. Activity constraints
- j. Dollar value of each activity if cost loaded schedule is required

Activities making up the critical path for the entire Contract and the critical path for each specific designated portion of the work shall be identified. The network diagram shall be organized to indicate a continuous flow of progress of activities from left to right.

Any activities that are estimated to exceed 20 working days in duration shall be further detailed into sub-activities for specific location, except activities comprising procurement only.

Along with the network diagram, the Contractor shall submit a tabular listing of the schedule.

If the Contractor submits and the Engineer accepts a CPM schedule which indicates a portion of the work or the entire Contract will be completed in less than the time specified for the completion of the designated portion of the Contract, the Contractor's scheduled completion date shall be the "Late Finish Date" of the last activity on the schedule.

The Engineer's acceptance of the schedule shall not relieve the Contractor from any errors in logic, unreasonable durations or omissions in that schedule.

### **12.02.03. Schedule Updates**

Once a month, or as frequently as required by the Engineer, the Contractor shall review and update the schedule to incorporate all current information, including progress, approved adjustments of time and proposed changes in sequence or logic. The updated schedule report shall state the percentages of work actually completed and scheduled as of the last date of the previous month of activity. The Contractor shall also submit a narrative report which shall include description of problem areas, current and anticipated delaying factors and their impact, and an explanation of corrective actions taken or proposed. Progress status shall be evaluated on the basis of float on the critical path at the time of updating, with negative float indicating the project is behind schedule and positive float indicating status ahead of schedule.

The updated schedule shall be submitted to the Engineer on or before the fifth day of each month or, in the case of an intermediate update, within such time as the Engineer may require. Reference is made to Article 12.04, "Liquidated Damages."

If the current updated CPM schedule indicates that contract progress is 20 days or more behind the planned schedule, the Contractor shall, within 7 days, submit to the Engineer, a report which indicates corrective actions taken or proposed to be taken by the Contractor in order to complete the project within the time specified. A narrative explanation of such actions and their anticipated effects on the schedule shall be provided along with a corrected schedule.

**12.02.04. Adjustments to Schedule**

If the Contractor considers that an ordered change or delay will impact the critical path or Contract progress, a schedule analysis and an updated CPM schedule supporting the Contractor's request for adjustment of time shall be submitted to the Engineer within 45 days of the occurrence of the ordered change or delay.

All changes shall be shown as separate activities or groups of activities and entered into the relevant part of the approved network schedule current at the time of change. In case of a deductive change reducing the quantity of work to be done under affected activities, the estimated duration for these activities shall be adjusted to reflect the reduced quantities of work.

The Contractor shall also submit a narrative report describing the adjustments, reasons for the adjustments, and the impact of the changes.

The Engineer will use these analyses of the effect of the change(s) or delay(s) on the critical path and the approved schedule current at the time of the change(s) or delay(s) to determine the applicable adjustment of time to any target date or completion date due to the change(s) or delay(s).

Only changes or delays that affect or create critical path items or work as defined by the schedule will result in time adjustments. Extensions of time for the Contract will only be considered if, after a delay is properly incorporated into the schedule logic, an extension of the project end date beyond the Contract end date results.

Total float or slack is defined as the amount of time between the early start date and the late start date, or the early finish date and the late finish date of any activity in the network. Total float or slack is not time for the exclusive use of or benefit of either the District or the Contractor. It is a resource available to the project.

**12.02.05. Payment**

Full compensation for furnishing, updating and submitting schedules for the project shall be considered as included in the various Contract items of work involved and no additional compensation will be allowed therefor. The Contractor's attention is directed to Article 12.04 regarding assessment of liquidated damages for failure to submit a schedule or updates as required.

**12.03. Schedule of Submittals**

The Contractor shall submit a Schedule of Submittals listing the target dates for submission of all shop drawings, product data, and samples. The Schedule of Submittals shall be incorporated into the Schedule of Work and shall be divided into construction categories corresponding as closely as possible to the Contract Specifications.

The Schedule of Submittals shall be submitted to the Engineer on or before the fifth day of each month for review along with the Detail Schedule of Work.



The Contractor's attention is directed to Article 9.02 of these Specifications regarding submittals to be furnished by the Contractor. The overhead rate to be applied to the actual wages of the Engineer and/or Engineer's consultant will be 2.33.

The Contractor's attention is directed to following Articles for submittals that require approvals prior to commencement of any work at the site:

Article 15.09—Asbestos Dust Mitigation Plan

Article 16.01—SWPPP

Article 02170—Site Health and Safety Plan

Article 02170—Excavated Materials Management Plan

#### **12.04. Liquidated Damages**

In accordance with Article 7.06, the District shall deduct, as liquidated damages from monies due the Contractor the following amounts:

\$1,200 per day for failure to complete all work included in the Contract required for the Installation Phase within the time limit allowed.

\$1,200 per day for failure to complete all work included in the Contract required for the Plant Establishment Phase within the time limit allowed.

\$250 per day for failure to submit the Preliminary Schedule of Work, Schedule of Work, Schedule Updates, Schedule Adjustments, and Schedule of Submittals within the time limits allowed.

\$800 per day for failure to install temporary mock up fascia panels within 90 days of the Notice to Begin Work. The Contractor's attention is directed to Section 07420 of these Specifications for specific details of the submittal and installation of the mock up fascia panels.

Each type of liquidated damages will be assessed independent of any other. The total damages assessed shall be the cumulative of the assessed values specified above.

Contractor's attention is directed to Article 12.05.02 regarding liquidated damage assessments for trucks arriving early or truck idling or queuing.

#### **12.05. Hours of Work**

No work, including but not limited to material hauling to/from the site and equipment movement, shall be performed during the days and hours set forth in this Article.

No work shall take place between 5:00 p.m. to 8:00 a.m. on weekdays. The contractor's attention is also directed to Section 12.05.01 regarding the time of arrival of vehicles used for transport or delivery of construction materials or equipment. The Contractor's employees shall not arrive at the Plant prior to 8:00 a.m.

Unless noted otherwise on the Drawings or these specifications, or approved in writing by the Engineer, no work shall take place on Saturdays, Sundays, or on any of the holidays listed below.

New Year's Day, Martin Luther King's Birthday, Presidents' Day, Memorial Day, Independence Day, Labor Day, Columbus Day, Veterans Day, Thanksgiving Day, Friday After Thanksgiving, and Christmas Day. If any of the above holidays should fall on a Sunday, the following Monday shall also be considered a holiday; and if a holiday should fall on a Saturday, the previous Friday shall also be considered a holiday.

**12.05.01. Truck Arriving Early and Truck Idling**

The District actively seeks to avoid or minimize unnecessary disturbance of the neighborhood from construction activities. Accordingly, no vehicles used for import, delivery or export of construction materials or equipment shall arrive at the Plant earlier than 9:00 am. No idling or queuing shall take place at the Plant Entry Gate or on residential streets in the surrounding neighborhood except for reasons noted below:

- idling when the vehicle must remain motionless due to an official traffic control device, traffic control signal, or at the direction of a peace officer, or traffic conditions over which the driver has no control;
- idling when being forced to remain motionless due to adverse weather conditions or due to mechanical difficulties over which the driver has no control;
- idling to verify that the vehicle is in safe operating condition as required by Law;
- idling at the Plant Entry Gate for security checks or searches by District guards.

The Contractor shall be responsible for obtaining the local haul route permit from the City of San Jose if necessary.

Truck traffic and hauling shall conform to the haul route permit except as further limited herein. Truck traffic or hauling may be permitted only on Berryessa Road, Piedmont Road, and Whitman Way provided they conform to the haul route permit. No truck traffic or hauling shall be permitted on any other streets.

Hauling hours are strictly limited to a daily operating schedule of 9 a.m. to 4 p.m., unless otherwise approved in advance by the Engineer in writing. Deliveries shall not occur outside these hours. All deliveries shall be coordinated to ensure that no delivery vehicles arrive at the Plant Entry Gate before 9:00 a.m. to prevent the disruption of the neighborhood.

**12.05.02. Liquidated Damages for Truck Idling and Truck Arriving Early**

The District shall deduct, as liquidated damages, from monies due the Contractor for vehicles violating the arrival time or idling requirement specified in Article 12.05.01 as follows:

\$500 for each truck found to be idling or queuing at the Plant Entry Gate or in the surrounding neighborhood without justification.

\$725 for each truck that arrives at the Plant before 9:00 a.m.

Imposition of liquidated damages for one or more incidents shall not preclude the District from taking other action as deemed appropriate to curb the violations, which may include but is not limited to Temporary Suspension of Work and Termination of Contract as described in Articles 7.05 and 7.08 respectively, and shall not relieve the Contractor of responsibility to comply with these Specifications.

#### **12.06. Weekly Coordination Meetings**

Weekly coordination meetings shall be held at the Engineer's office trailer on Thursday mornings for an hour at a mutually agreed time. The Contractor's representative shall have a thorough knowledge of the work.

The Contractor shall conduct the meetings, prepare meeting agendas, and prepare meeting minutes. The agenda shall include the following topics:

- Three week look ahead schedule
- Status of work completed
- Public concerns
- Construction safety concerns
- Submittal status
- Requests for information (RFI) status
- Change orders status
- Coordination items
- Outstanding items

## **SECTION 13. SPECIAL REQUIREMENTS**

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### **13.01. Designated Engineer**

The Designated Engineer of the District is the Deputy Operating Officer of the Capital Program Services Division acting either directly or through properly authorized agents.

### **13.02. Office Facilities**

Office facilities for the Engineer will not be required for this project.

### **13.03. Project Signs**

Project signs are not required for this project.

### **13.04. Safety**

The Contractor shall be completely responsible for conditions of the jobsite, including safety of all persons and property during the performance of the work, except from District's sole negligence or intentional misconduct. This requirement shall apply continuously until the Contract is terminated and shall not be limited to normal working hours.

The Contractor is hereby informed that work on this project could be hazardous. The Contractor shall carefully instruct all personnel working in potentially hazardous work areas as to potential dangers and shall provide such safety equipment and instruction as is necessary to prevent injury to personnel and damage to property. Special care shall be exercised relative to work around high-voltage wires, high-pressure gas mains, high-pressure water pipelines, and other utilities. Temporary supports, as required by the utility company, shall be provided by the Contractor to protect utility facilities.

All work and materials shall be in strict accordance with all applicable City, County and State Rules, Ordinances, Regulations, and Codes. The Contractor shall comply with CAL-OSHA Labor Code Section 6300 et seq. and with Chapter 4 of Title 8 of the California Administrative Code. Nothing in these Specifications shall be construed to permit work not conforming to governing codes. When Contract Documents differ from governing codes, the Contractor shall furnish and install the higher standards called for without extra charge.

Prior to start of Work, the Contractor shall submit a job specific Injury and Illness Prevention Plan in accordance with CAL-OSHA requirements. A copy of this plan shall be available at all times in the Contractor's jobsite trailer. The Contractor shall designate a safety officer who will monitor and enforce the Injury and Illness Prevention Plan.

At all times the Contractor shall provide for public safety and convenience.

The Contractor's operations shall be conducted so as to offer the least possible obstruction and inconvenience to the public along with the greatest safety to the public. At no time shall the Contractor have more work underway than can be prosecuted with proper regard to these considerations to the public.

At all times the Contractor shall provide sufficient measures, such as, but not limited to: barricades, railings, flares, lights, fences, and any other warning devices, to reasonably and prudently provide for the greatest public safety and convenience.

The Contractor is referred to Article 5.11 regarding excavation safety plans.

The services of the Engineer in conducting construction review of the Contractor's performance are not intended to include review of the adequacy of the Contractor's work methods, equipment, bracing or scaffolding, or safety measures, in, on, or near the construction site.

The Contractor is referred to Article 15.09 and Section 02170 regarding serpentine soils with naturally occurring asbestos and the required Site Health and Safety Plan, Excavated Materials Management Plan, and Asbestos Dust Mitigation Plan.

Unless otherwise specified, all payments for complying with the requirements of this Article shall be considered as included in the price paid for other items of work and no additional compensation will be made therefor.

#### **13.05. Parking**

Trucks and contractor personnel vehicles parking, access, and haul routes shall be in compliance with local permits and ordinances except as further limited herein.

All construction equipment and worker vehicles arriving at the plant shall park within the plant as indicated in attachment C. Workers shall enter the site as soon as they arrive to the site.

No trucks or worker vehicles shall be parked on residential streets. Limited parking on the south side of Whitman Way and the west side of Vista Del Mar may be allowed, but only with advance approval by the Engineer.

No loading, unloading or any other construction related operations shall be performed at the gate or outside the plant boundary.

#### **13.06. Traffic Control Measures**

During delivery and export of construction materials and equipment, the Contractor shall provide traffic flaggers and signs along the access route.

The Contractor shall also provide:

- traffic control monitors to assist with monitoring truck traffic at Whitman Way and Grossmont Drive when more than twenty (20) trucks are anticipated to arrive at the plant during a single day, or when directed to by the Engineer; during the starting and ending times of Noble Elementary School and Piedmont Middle School.
- notification to the Engineer at least 3 working days in advance of any single day when more than twenty (20) trucks are anticipated to arrive at the plant.

All payments for providing and conducting traffic control measures shall be measured and paid by the hour based on an estimate of 300 hours. Full compensation for doing all work necessary to provide 300 hours of traffic monitoring including all materials, labor, equipment, service, supervision, documentation, and submittals shall be included in the price bid per hour for TRAFFIC CONTROL MONITORING, Bid Item No. 38.

**13.07. District-Furnished Materials**

The District will furnish the following materials to the Contractor. The Contractor shall install the District-furnished materials at the locations shown on the Drawings.

The following landscape plants:

| Name                               | Quantity | Container Size |
|------------------------------------|----------|----------------|
| Cedrus deodara. Deodar Cedar 5     | 5        | 48" Box        |
| Quercus agrifolia Coast Live Oak 5 | 6        | 48" Box        |

The landscape plants are located on site. The Contractor shall be responsible for transporting these plants to the final planting locations as shown on the Drawings.

**13.08. Materials and Equipment Guaranty**

The Contractor shall furnish a written guaranty covering all materials and equipment furnished and installed by the Contractor and shall be responsible for the full expense incidental to making good any and all defective materials and equipment covered.

Except noted otherwise, all other materials and equipment furnished and installed by the Contractor, and the installation of material furnished by the District, shall be covered by guaranty for a period of 3 year after the completion and acceptance of all work done under the Installation Phase of this Contract.

The Contractor shall also cover by guaranty for a period of 3 year all utilities repaired, replaced, or crossed by the Contractor in connection with the work done under this Contract.

The Contractor shall also cover by guaranty for a period of 3 years all paving placed, including the paving replaced over the trench. Any settlement or failure of the paving shall be repaired, at the Contractor's expense, to the satisfaction of the District and the jurisdiction having control.

The Contractor's attention is directed to Section 02900 which describes the one year Plant Establishment Phase. The Contractor shall also cover by guaranty for a period of 1 year all plant materials furnished by the Contractor and the District, and installed by the Contractor, for the duration of the Plant Establishment Phase, in accordance with Section 02900.

The warranty period shall begin after final acceptance of the installation work as defined under Article 12.01.02.

The above guaranties are covenants, the performance of which shall be secured by a surety bond which shall be delivered to the District by the Contractor before final acceptance of the work. Said bond shall be in a form satisfactory to the District in an amount equal to 15 percent of the final Contract amount. Said bond shall remain in force for the period of guaranty. The Contractor may extend the expiration date of the performance bond filed with the Contract for a period of 1 year after the date of acceptance of all work, in lieu of the special surety bond.

Any work performed under the guaranty shall comply in all respects with the requirements of these Contract Documents.

Should the Contractor fail to comply with any guaranty provided by this Contract within a reasonable time to be specified by the District, the District may, at its discretion, proceed to have any failure, defect or damage repaired, corrected or made good at the expense of the Contractor, whose obligation under this Contract includes the obligation to pay the costs and charges therefore immediately upon demand.

**13.09. Price Submittal**

The Contractor shall prepare and submit to the Engineer a detailed cost breakdown to serve as the basis for progress payments before work commences.

The cost breakdown shall be segmented into basic items of work corresponding to Bid Items listed in these specifications - Measurement and Payment with the aggregate equaling the Contract total. Cost breakdowns containing prices which appear unbalanced may be rejected.

The following general guidelines shall be followed:

- A. There must be sufficient detail included to allow the Engineer to verify progress in accordance with the progress payments specified elsewhere. As a minimum, the cost of each Specification section shall be identified.
- B. Each price must include the cost of material, equipment, and labor stated separately.

Progress payments will not be made until the detailed cost breakdown has received favorable review by the Engineer.

**13.10. Survey Monuments**

No survey monuments, permanent markers for the District right of way, or District survey control points shall be removed or disturbed until the Engineer has recorded the locations thereof, and a permit for such removal has been received from the agency having jurisdiction. When the construction work has been completed, the Contractor shall replace said monuments accurately in the locations as referenced by the Engineer at no expense to the District.

Installation of the survey monuments, if any, shall be in accordance with initial monument installation as shown on the City of San Jose's Standard Plan Details for Public Works Construction, Page R-17, and the City of San Jose's Standard Specifications for Public Works Construction, Section 81.

If any marker or monument is destroyed by the Contractor and has not been referenced by the Engineer, the Contractor shall be responsible for the accurate replacement of said marker or monument by a Land Surveyor licensed by the State of California in accordance with the California Business and Professions Code Section 8771 at no expense to the District.

**13.11. Drawings**

The Drawings listed under Index of Drawings accompany these Specifications and are made a part thereof.

**13.11.01. Record Drawings**

The Contractor shall maintain one record set of Drawings at the Project Site. On these, the Contractor shall mark all project conditions, locations, configurations, and any other changes, variances, or deviations from the information represented on the original Contract Drawings, including buried or concealed construction and utility features which are revealed during the course of construction. Special attention shall be given to recording the horizontal and vertical location of all buried utilities that differ from the locations indicated, or which were not indicated on the Contract Drawings. Said record drawings shall be supplemented by any other detailed sketches as necessary or as directed to fully indicate the Work as actually constructed. These master record drawings of the Contractor's representation of as-built conditions, including all revisions made necessary by addenda and change orders shall be maintained current during the progress of the Work. Red ink shall be used for alterations and notes. Notes shall identify the relevant Change Orders by number and date.

Record drawings shall be accessible to the Engineer at all times during the construction period.

Final payment will not be processed until the record drawings have been prepared and delivered to the Engineer. Said record drawings shall be in the form of a set of prints with carefully plotted information overlaid.

Upon substantial completion of the Work, and prior to final acceptance, the Contractor shall finalize and deliver a complete set of record drawings to the Engineer, conforming to the construction records of the Contractor. The information submitted by the Contractor and incorporated into the record drawings by the Engineer will be assumed to be correct, and the Contractor shall be responsible for the accuracy of such information, and for any errors or omissions which may appear on the record drawings as a result.



**13.12. Insurance****13.12.01. Liability Insurance Limits**

Liability insurance limits shall be in accordance with Article 6.17.02, and as modified herein. Liability insurance limits shall be \$2,000,000 per occurrence and \$2,000,000 aggregate.

The commercial general liability insurance policy specified in Article 6.17.02 must provide coverage or be endorsed to provide coverage for pollution liability or evidence of separate pollution liability coverage with \$1,000,000 per occurrence and aggregate limits must be provided. In either case, there must be no known impairment of the policy limits for the pollution coverage.

**13.12.02. Additional Insured/Indemnification**

The policy of insurance required by the Standard Provision of Article 6.17.02 (B) shall name the following as additional insured:

Stevens and Associates  
City of San Jose

In addition to Article 6.16, the Contractor shall defend, indemnify and hold harmless the above-named agencies/parties, their officers, consultants, Contractors, agents and employees from any and all claims, suits, damages or actions of every name and description, brought on account of any injuries or damages received or sustained by or from the Contractor, his/her servants or agents, in the construction of the work in consequence of any negligence in guarding the same, in the use of improper materials for construction or on account of any act or omission of the Contractor or his/her servants or agents.

**13.13. State Specifications and State Standard Plans**

Unless otherwise stated, State Specifications and State Standard Plans referred to in these Specifications shall be the latest edition of the State of California Department of Transportation Standard Specifications and Standard Plans.

**13.14. Property Surveys**

After the Contract has been awarded, and before commencement of work, the Contractor shall conduct a thorough examination of the work areas within the project limits in the presence of the Engineer. The Contractor shall inspect the condition of the affected areas to be determined by the Engineer, including but not limited to, existing improvements, levees, ramps, buildings, landscape planting, architectural finishes, the size of structural cracking or settlement, the rate of leakage, and any other conditions deemed appropriate. The presence of the Engineer shall in no way relieve the Contractor of the responsibility for completely and accurately documenting the existing conditions.

Records in triplicate of all observations shall be prepared by the Contractor, and every copy of all documents shall be signed by the authorized representative of the Contractor, and provided to the Engineer. Photographs and video tapes, as deemed appropriate by the Engineer, shall be made by the Contractor and be included in the record of observations. One signed copy of every document, photograph, and video tape will be kept on file in the office of the Engineer.

The above records, photographs, and video tapes are intended for use as evidence in ascertaining the extent of any damage which may occur as a result of the Contractor's operations during the prosecution of the Contract work.

Structural surveys, if any, shall be conducted by a licensed civil or structural engineer.

All payments for conducting property surveys and providing documentation shall be considered as included in the price paid for other items of work and no additional compensation will be made therefor.

### **13.15. Wildlife Protection**

#### **13.15.01. Migratory Birds**

##### **A. Regulatory Requirements**

The Contractor shall comply with all applicable federal and state laws, rules and regulations related to protection of migratory birds. The Contractor's attention is directed to the federal Migratory Bird Treaty Act (16 USC 703-712 50 CFR Part 21 and 50 CFR Part 10), and the California Department of Fish and Game Code Sections 2000, 3503, 3503.5, 3513, and 3800, that protect migratory birds, their nests, and their eggs from disturbance or destruction.

The Contractor shall carry out all activities in a manner consistent with the Migratory Bird Permit Memorandum (Appendix C), issued by the U.S. Fish and Wildlife Service dated April 15, 2003. Except as may be noted elsewhere in this Article, active nests are those containing either an egg (or eggs) or young, and/or nests used by birds of prey (i.e., members of the orders Falconiformes and Strigiformes, known as raptors) regardless of the presence of eggs or young; whereas inactive or partially-built nests of species other than raptors do not contain any eggs or young. To determine the occupancy of nests, the Contractor shall rely upon the professional expertise of a qualified biologist (Section C of this Article).

The Contractor shall coordinate several measures, including; awareness of which migratory bird species are protected, their nesting seasons and seasonal variability; surveys to determine the presence of nesting birds in the project area; establishment of protective buffer zones around nests; installation and maintenance of exclusion devices; and periodic monitoring to assure the adequacy of the compliance measures.

**B. Scope of Work**

The Contractor shall ensure that birds are not allowed to nest in areas that may be impacted by the project and shall not harm, or allow to be harmed, any migratory birds per provisions of all applicable statutes.

The Contractor shall be aware of migratory bird nesting seasons and variability; monitor the project site; perform preventative and deterrence measures to prevent birds from nesting; preserve and protect pre-established protective buffer zones; perform surveys to determine the potential for protected species to be in the project area; establish new protective buffer zones around unprevented nests, as required; maintain and install exclusion devices, such as netting and/or wire mesh screens; periodically monitor to assure the adequacy of the compliance measures; and perform any other work as specified herein to comply with all applicable statutes.

Prior to the District releasing the site to the Contractor, the Engineer and the Contractor shall assess the site to determine the presence of nesting birds protected by all applicable statutes, as well as the existing protective buffer zones and exclusion devices within or near the construction areas.

The Contractor shall provide a District-approved biologist to monitor regulatory compliance and to coordinate with the Engineer, in conformance with this Article, and all applicable permit conditions.

The District will have monitored and controlled the site, including installing and maintaining protective buffer zones and exclusion devices until the issuance of the Notice to Begin Work, at which time the site will be released to the Contractor. Upon accepting the site, the Contractor shall assume complete responsibility for the site, including the existing protective buffer zones and exclusion devices, and shall perform all required work as specified herein.

**C. Contractor Biologist**

The Contractor shall employ a biologist meeting the qualifications of "Contractor Biologist" as listed in Appendix D to supervise all work under this Article. At anytime during the contract, the District reserves the right to request a replacement biologist due to non-performance or for reasons outlined in Article 9.05 of these Specifications.

The Contractor Biologist shall:

- Monitor the project site for nest starts and occurrences of active bird nests.
- Document the location, status, and species of bird for each active nest.
- Monitor the Contract Work to ensure that protected birds are not disturbed in a manner that could result in non-compliance.

- Establish additional protective buffer zones around active nests, as specified herein.
- Monitor all protective buffer zones to ensure that nests are not violated and advise when protective buffer zones are no longer needed and can be removed.
- Monitor the maintenance and effectiveness of bird exclusion devices.
- Provide recommendations concerning installation of additional exclusion devices and maintenance of such devices-to prevent bird nesting.

**D. General Nesting Seasons**

The nesting season in the project area is generally considered to be from February 1<sup>st</sup> through August 31<sup>st</sup>. However, annual variation in climatic conditions can alter these periods by several weeks.

**E. Migratory Bird Surveys**

The Contractor shall perform migratory bird surveys prior to any project-related activity that could pose the potential to affect migratory birds.

The Contractor shall notify the Engineer in writing at least 15 days and no more than 30 days in advance of initiation of project-related activities, such as movement of equipment, materials stockpiling, bridge work, clearing, grubbing, excavation, establishment of site access, etc.

**F. Protective Buffer Zones**

Existing protective buffer zones, if any, are shown on the Drawings. Establishment of protective buffer zones shall be required as a result of the establishment or occurrence of a nest during the construction period. In the event that an active nest of a protected species is discovered in the construction area during construction, or in adjacent areas considered to have the potential to be disturbed by construction, the Contractor shall notify the Engineer and establish a protective buffer zone around the nest at the direction of the Engineer. The exact location of the boundaries of protective buffer zones shall be established by the Engineer. The Contractor shall install plastic fence at the boundary of each new protective buffer zone, except as otherwise directed by the Engineer. The Contractor shall preserve and protect all protective buffer zones, including existing ones, at all times.

The Contractor shall be responsible for any added costs or schedule delays as a result of establishment of new nests or new protective buffer zones due to the Contractor's failure to perform the bird exclusion responsibilities as specified under this Article.

The Contractor shall monitor protective buffer zone operations during construction. Requirements for the protection of active nests may vary depending on the location

and the species involved. The following are general guidelines to be followed by the Contractor when an active nest is encountered:

- Stop any activities that may harm the nest.
- Contact the Engineer immediately.
- Only the Contractor's biologist should approach the nest, and only if necessary.
- The Contractor shall inform employees of the presence of an active nest and take steps, described above, to avoid disturbing it.
- Until inspected by the Engineer, a 20-foot radius protective buffer zone shall be established around the nest of any non-raptor, ground-nesting bird, and a 50-foot radius protective buffer zone around nests established in shrubs, trees, on structures, on equipment, etc., except for raptor nests. Furthermore, the protective buffer zone shall be 250 feet for hawks, owls (including burrowing owls), herons, and egrets. The Contractor's biologist may recommend, for approval by the Engineer, modification of these perimeters.

**G. Installation and Maintenance of Exclusion Devices**

The Contractor shall install nesting exclusion devices to prevent potential establishment or occurrence of a nest during the construction period. The Contractor shall maintain all nesting exclusions devices, including existing ones, throughout the nesting season, or until completion of work in an area makes the devices unnecessary. The Contractor shall be responsible for the maintenance, repair, or replacement of exclusion devices until all of the work is complete. The Contractor shall remove and dispose of all exclusion devices when work in the area is complete. Any exclusion devices installed by the District prior to construction start must also be removed and disposed of by the Contractor when completion of work in the area makes the devices unnecessary, and no additional compensation will be provided therefor.

Bird exclusion devices shall be installed during the non-nesting season (September 1 through January 31). The Contractor shall obtain approval from the Engineer when installing bird exclusion devices during the nesting season (February 1 through August 31). All exclusion devices shall be inspected daily by the Contractor to ensure integrity of the devices, and to prohibit birds from nesting without causing them harm.

**H. Vegetation Management for Nest Prevention**

The Contractor is hereby notified that all areas to be cleared of vegetation may be suitable nesting habitat for migratory birds. The Contractor shall perform all necessary clearing prior to the nesting season, if at all possible. If clearing must occur during the nesting season, the Contractor shall obtain prior approval from the

Engineer. If vegetation must be cut and maintained to prevent birds from nesting, it must be cut to less than 6 inches in height and removed.

The Contractor is to inspect/monitor gravel areas prior to commencement of the nesting season and as frequently as necessary thereafter to provide deterrence measures and prevent nesting by birds such as killdeer. Bare areas and gravel areas shall be monitored to prevent ground-nesting birds, such as killdeer, from establishing a nest.

Removal of vegetation (trees, shrubs, grasses, and herbaceous plants) shall be limited to areas shown on the Drawings designated for vegetation removal unless approval is obtained from the Engineer to remove vegetation from additional areas. No vegetation shall be trimmed back unnecessarily, including trees and/or shrubs growing near the right of way, which overhang onto the work site. Such overhanging foliage shall be protected and tied back if necessary. Landscaped areas and irrigation systems outside of the construction areas shall be preserved and protected from damage by the Contractor's operation.

#### ***Pre-Established Vegetation Management Areas***

Some areas of vegetation removal, clearing, and eradication indicated on the Drawings and in this Article may be established and cleared by the District before the Contractor's starting date as noted in the Notice to Begin Work. In these areas, the Contractor shall be responsible for the continued clearing and eradication of all resprouts.

#### **I. Monitoring**

The Contractor is responsible for ongoing monitoring to assure that migratory birds, their active nests, eggs, and young are not harmed in any way.

Prior to the beginning of the nesting season, the Contractor shall inspect all project areas that may be impacted by construction and, at the direction of the Engineer, remove any inactive bird nests, with the exception of raptor nests. During the nesting season, the Contractor shall inspect all project areas that may be impacted by construction, including all vegetation, grounds, and bridge(s), with sufficient frequency as needed, to identify any new and partially-built nests.

The Contractor shall be responsible for the removal of any partially-built nests, with the exception of raptor nests. No birds, nests with eggs, or nests with hatchlings shall be disturbed, nor shall raptor nests be removed.

#### **J. Submittals**

The Contractor shall:

- Submit resumé of qualifications of Contractor Biologist for the Engineer's review. The Contractor Biologist's qualifications must meet the minimum requirements as specified for "Contractor Biologist" listed in Appendix D.

The resumé shall be submitted and must be favorably reviewed by the Engineer prior to any commencement of work at the site.

- Submit to the Engineer, no later than 15<sup>th</sup> day of each month, a monthly report prepared and signed by the Contractor Biologist that documents the activities of the Contractor including, at a minimum, the status of the installation, maintenance, or removal of any bird exclusion devices or protective buffer zones, and their locations, as well as report the current status of previously documented bird nests.
- Maintain and, when requested by the Engineer, submit a log, including photo-documentation, weekly documenting the time, date, condition of nests, and any nest prevention actions taken during inspections.
- Provide product data for nesting exclusion devices, fencing for protective buffer zones, and any shop drawings as deemed appropriate by the Engineer.
- If Contractor wishes to modify the dimensions of any protective buffer zone, or to modify any bird exclusion device, a written proposal of such modification must be submitted for review and approval by the Engineer. The submittal must contain the Contractor Biologist's written justification for the proposed modification and shall include a description of the anticipated effects on the active nest and nesting birds.

**K. Payment**

Full compensation for providing all labor and materials for doing all work necessary to prevent bird nesting, including providing a qualified biologist for migratory bird monitoring and surveying; establishing, installing, maintaining, reconfiguring and removal of protective buffer zones and/or exclusion devices; and performing all other work as specified in this Article shall be considered as included in the various contract items of work involved and no additional compensation will be allowed therefor.

**13.16. Violation of Good Neighbor Contract Measures**

The District is a public entity which takes seriously its responsibility to be a "Good Neighbor". Accordingly, the District seeks to perform its activities, including construction of its facilities, in a manner that takes into consideration the needs of the neighborhood, and is minimally disruptive. Contractor acknowledges that District requires it to perform work under this contract with that responsibility in mind. Contractor hereby acknowledges the critical importance of meeting the Good Neighbor contract requirements relative to, but not limited to: the hours during which work may be performed; the required health and safety measures; traffic control measures; and dust, noise, and storm water pollution measures (set forth in Articles 12.05, 13.04, 13.05, 13.06, and Sections 15 and 16). Contractor agrees to ensure the faithful and assiduous adherence to those provisions which relate to the lessening of the impact which the work being performed under this contract, might otherwise have upon the surrounding neighbors. Contractor acknowledges that its

responsibility to observe the restrictions of this Contract relating to Articles 12.05, 13.04, 13.05, 13.06, and Sections 15 and 16 of these specifications are significant, critical, and material provisions of this Contract. Therefore any breach of any provision of Articles 12.05, 13.04, 13.05, 13.06, or Sections 15 and 16 of these specifications constitutes a material breach of this Contract which shall give rise to the right on the part of the District to immediately terminate this contract, without any further showing of cause .

No decision, action or inaction on the part of the District with respect to one such violation may be deemed to be a waiver of any remedy available to the District, or a waiver in the event of any other violation of the provisions of this Contract, including the right to terminate this Contract at any time and at any stage of the work should a material breach occur.

**13.17. Subcontracting**

The Contractor shall give personal attention to the fulfillment of the contract and shall keep the work under the Contractor's control.

No sub-Contractor will be recognized by the District as such and all persons engaged in the work of construction will be considered by the District as employees of the Contractor and the Contractor will be held responsible for their work, which shall be subject to the provisions of the contract and Specifications.

Nothing contained in the Specifications or plans shall be construed as creating any contractual relationship between any sub-Contractor and the District. The divisions or sections of the Specifications are not intended to control the Contractor in dividing the work among sub-Contractors or to limit the work performed by any trade.

The Contractor shall be fully responsible to the District for the acts and omissions of sub-Contractors, and of persons employed by the Contractor.

The Contractor shall be responsible for the coordination of trades, sub-Contractors, and suppliers engaged upon this work.

**13.18. Field and Laboratory Tests for Quality Assurance**

The District through its contracted agent will perform field and laboratory testing for quality assurance for the different elements of work. Although the tests results are promptly provided to the Contractor, these tests are solely intended for the District quality assurance monitoring. Field and laboratory testing performed by the District are not intended for Contractor's convenience. If necessary, the Contractor shall provide his own tests for his quality control program in order to meet the requirements of the Contract and shall not solely rely on the District provided test results.

The Technical Provisions of these specifications make reference to different field and laboratory testing methods to be used for acceptance of different items of work (example: ASTM method, etc.) Although not explicitly spelled out in the Contract, the District at its discretion may use the equivalent California Department of Transportation Test methods



(CalTrans), or a combination thereof, in lieu of the testing standard specified in the Technical Provisions herein.

**13.19. Payment**

Unless included under other bid items, full compensation for compliance with the requirements of this Section shall be considered as included in the price paid for other items of work and no separate payment will be made therefore.

## **SECTION 14. COORDINATION AND REPORTS**

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### **14.01. Existing Utilities**

Various utilities, District facilities, and non-District facilities, both above and below ground, will be encountered during construction operations. Where it is known or anticipated that a utility will be encountered during construction, the Contractor shall be responsible for notifying the affected utilities having control of the utility at least 48 working hours in advance of work in which the utility will be involved. Coordination of work near utilities and the protection of the utility during construction shall be the Contractor's responsibility. The Contractor's attention is directed to Article 6.14 regarding preservation of property and Article 7.10 regarding coordination with utilities. If the Contractor encounters existing utilities which have sustained damage prior to excavation, the Contractor shall promptly notify the District.

The Contractor shall exercise care to prevent accidental cutting of telemetry cables. Locating cables shall be performed by hand digging or other non-destructive means. In the event of accidental telemetry cable service interruption resulting from Contractor activities, the District may either make the repairs using District staff or direct the Contractor to make the repairs at no cost to the District. If directed by the District to do the repairs, the Contractor shall complete the repairs within 4 hours. The District will double the cost of any direct or indirect damages resulting from the loss of telemetry cable service and the cost of the repairs, in the event that District staff performs the repairs, and deduct these costs from the monies that are due or that may become due the Contractor.

Telemetry cables are critical to the operations of District water supply facilities; therefore, advance notice from the Contractor in writing is required for telemetry cable service interruptions. The Contractor shall notify the Engineer two weeks in advance of any activities that will result in cutting or splicing a telemetry cable. The Contractor shall confirm this cutting or splicing to the Engineer by phone the day before it occurs, and the day when it occurs.

The Contractor shall be responsible for all costs associated with ensuring the protection, modification, and continued operation of the existing utilities during construction except as specified herein. This includes the costs of complying with the requirements of the individual utilities, whether or not the requirements are specifically stated in these Specifications.

The District and the owners of facilities or their authorized agents reserve the right to enter upon the right of way at all times for the purpose of operations and maintenance of their facilities or for making necessary connections or repairs to their properties. The Contractor shall cooperate with the District and the affected utilities engaged in such work and shall conduct his operations in such a manner as to avoid any unnecessary delay or hindrance to this work.

The Contractor shall protect in place all utilities which may be impacted by the work. All exposed utilities shall be supported firmly and uniformly, conforming to the utility requirements. No utilities shall be left exposed for a period exceeding 8 hours unless approved by the utility and the Engineer. Unless otherwise shown on the Drawings, all utilities shall be backfilled with at least 12 inches of select backfill around the utility.

All utility pole and guy anchors shall be protected and, where the walls of the trench are within 5 feet of a pole or anchor, lateral support to the pole shall be provided at the Contractor's expense.

The Contractor is responsible for doing all work and furnishing all materials required for protecting in place or restoring all existing above and below ground utilities removed or damaged during construction to a condition equal to or better than that existing prior to construction. Payment for complying with this provision shall be considered as included in the price paid for other items of work and no additional compensation will be made.

**14.02. Rights of Way****14.02.01. District-Furnished Right of Way**

Work will be located in District rights of way.

**14.02.02. Contractor-Furnished Right of Way**

Any additional right of way desired by the Contractor shall be provided by the Contractor at no expense or obligation to the District. The Contractor shall provide the Engineer with copies of any agreements between the Contractor and property owners regarding disposal of excess materials generated by the Contractor's activities, storage of materials, or any use of property in conjunction with this project. The agreement shall state that the agreement is solely between the Contractor and the property owner and that the District is not a party to the agreement or responsible for any compliance with the agreement.

**14.02.03. Access to Properties**

Construction operations shall be conducted in such a manner as to cause as little inconvenience as possible to adjacent property owners.

Convenient access to driveways, houses, buildings, and businesses along the line of the work shall be maintained at all times and temporary approaches to crossings or intersecting streets shall be provided and kept in good condition.

When construction operations are directly within the driveway area, temporary access shall be provided. The existing access shall not be closed until the temporary replacement access is usable. Once construction is completed, access is to be restored to a condition equal to or better than that existing prior to the Contractor's operation.

Per California Vehicle Code Section 22500, stopping, parking, or leaving standing any vehicle in front of public or private driveway shall not be allowed.

**14.03. Permits and Agreements**

Reference is made to Appendices A, B, and C for copies of Permits and Agreements.

**A. Permits and Agreements Obtained and Paid for by the District Prior to Construction**

- Notice of Intent (NOI) to State Water Resources Control Board to obtain coverage under Construction General Permit Order # 99-08-DWQ.
- City of San Jose Planning Permit
- Notice of Termination (NOT), State Water Resources Control Board

**B. Permits and Agreements Obtained and Paid for by the Contractor**

- Storm Water Pollution Prevention Plan (SWPPP)
- All vehicle hauling permits
- BAAQMD's Asbestos Dust Mitigation Plan

Copies of the applicable permits are attached to these Specifications as Appendix A and made a part hereto. The Contractor shall be responsible for complying with all relevant conditions of said permits, among them include:

**14.04. Access to the Jobsite**

The project location is shown on a map included in the Drawings. The Contractor may use the existing roads to perform the work subject to the restrictions specified herein. It shall be the Contractor's responsibility to obtain any and all permits that may be required from the State, City, or County and to comply with these specifications to move materials and equipment to the jobsite, dispose of excess material created by the Contractor's operation and for traffic control to, from, and on the project sites. Attention is directed to Article 6.13 regarding road maintenance and repair, and Article 15.08 regarding discharge and release of regulated materials. If, at any time, the Contractor wishes for his/her convenience to cross right of way not provided by the District to get to the construction site, the Contractor shall obtain permission from the property owner in accordance with the provisions of Article 14.02.02.

**14.04.01. Traffic Access to Plant**

The Contractor will be performing work at an operating water treatment plant which is a critical operation facility and must remain in continuous operation at all times. The Contractor shall schedule and perform his work such that there is no disruption to the Plant operations and Plant access. Access to the Plant and all portions of the Plant shall be maintained at all times for the Plant staff, chemical deliveries, and all other delivery vehicles. Trenching for irrigation piping and electrical conduits will cross the access roads at the Plant Entry Gate and at several other locations shown on the Drawings. The Contractor shall coordinate the trenching activities with the Engineer, and shall provide traffic steel plates as required to maintain Plant access. No access interruption to any portion of the Plant will be allowed. The Contractor shall notify the Engineer at least 10 days in advance of any planned trenching or excavation crossing any access road.

**14.05. District-Furnished Reports**

The following report is available for review at the District office:

"Naturally Occurring Asbestos Preliminary Site Investigation Report" – July 2003

"Soil Sampling and Chemical Analysis, Landscaping Sample Locations" -- June 2, 2006

**14.06. Construction by Others**

The Contractor is advised that the following projects may be occurring during period of this Contract:

- WTIP Stage 2 Construction
- Painting of Clearwell
- Maintenance Building

The Contractor's attention is directed to Section 7-1.14 of the State Specifications and Article 6.19 of these Specifications regarding cooperation. No additional payments will be made or claims considered for delay caused to this Contract because of conflicts with other construction.

**14.07. Discovery of Archeological Artifacts and Human Remains**

No known archeological sites were discovered on the site. If, however, burials or archeological artifacts are encountered during construction, the Contractor shall halt work immediately within 50 feet of the find. A "no work" zone shall be established utilizing appropriate flagging to delineate the boundary of this zone. Contractor's attention is directed Article 6.26 – Burial Sites and Article 6.28 – Delay Due to Archeological Discovery for additional requirements.

**14.08. Surveys**

The Contractor shall, without additional cost to the District, give such assistance and provide equipment and material as may be required by the Engineer in layout of work and surveys. The Contractor shall adjust construction operations at such points and for such reasonable time as may be necessary to assist in the layout of work and surveys.

The Contractor shall notify the District in writing a minimum of 7 working days before starting operations that require stakes. The Contractor shall request for staking only for the areas that have been cleared and grubbed.

The Engineer will provide staking services as follows:

- Establish survey control points as shown on the plans.
- Delineate the Plant property line where needed.

- The District will provide to the Contractor the station(s) and offset distance(s) to all reference points bench marks that were created.

The District will establish required stakes only once. Survey stakes destroyed or removed shall be replaced by the District at the Contractor's expense.

The Contractor shall not remove or disturb survey monuments and permanent markers unless otherwise approved by the Engineer, and the District has recorded and referenced the locations. The Contractor shall be charged at a reasonable rate for the restoration or replacement of survey monuments and permanent markers by the District.

The relocation and protection of survey monuments shall be in accordance with Article 13.08, "Survey Monuments," of these Specifications.

The Contractor shall be solely responsible for the measurements and layout of the project from the given line and grade stakes, slope stakes, and offset stakes. Any questions with regard to interpretation of project layout shall be resolved by the Engineer.

#### **14.09. Public Notification**

The Engineer is responsible for all written and oral communications with the public and the neighbors. The Contractor shall provide the Engineer with a schedule of major construction operations three (3) weeks in advance of their occurrence, to allow the District time to notify the neighbors. Milestones within the work schedule (i.e. Pending construction, work schedule, etc.) shall be given to the Engineer two (2) weeks in advance.

The Contractor shall include, in the submittal, descriptions of the nature and extent of the proposed work and the schedule date(s) of the work.

- The milestone submittal shall and include, but not be limited to, the following work activities: traffic controls, material delivery and haul-off, parking restrictions, concrete pouring, metal screen installation, sample fascia panel installation, etc.
- The milestone submittal shall also include dates for one time deliveries such as construction trailers, heavy equipment, and so forth.

The Engineer will provide the above milestone schedules two (2) weeks in advance as well as 24 hour notices to all property owners and tenants adjacent to the project site and to others potentially impacted by the proposed construction activities. If for any reason, the scheduled construction activities are delayed beyond the aforementioned 2 week period, the Contractor shall notify the Engineer in writing explaining the delay and the revised schedule. The delay notice shall be given to the Engineer no later than one (1) week prior to the proposed activity.

All payments for coordinating the work and providing notices as specified shall be considered incidental and included in the other items of work and no additional compensation will be made therefor.

**14.10. Security Requirements at Job Site****14.10.01. General**

- A. The Contractor shall comply with the security requirements specified herein during the entire construction duration. These requirements are not to be construed to relieve the Contractor of his/her responsibility for the Work as specified in Article 6.15 of these Specifications.
- B. Contractor's personnel includes the Contractor's own staff including, but not limited to, all tiers of subcontractor's staff, manufacturer's representatives, technicians, delivery drivers, etc.

**14.10.02. Identification and Badges**

- A. All of the Contractor's personnel that enter the project site are required to possess and carry a valid photographic identification. Current driver's license or identification card issued by the California Department of Motor Vehicles or by other States is considered valid photographic identification. This identification shall be presented to District staff and security guards upon request. Contractor's personnel without such identification will be denied access or be asked to leave the site.
- B. The District will provide project-specific identification badges for use by Contractor's personnel. The District will issue a photographic identification badge to each person who work at the site more than 5 continuous days and generic (non-photographic) temporary badges for Contractor's personnel who work on an occasional basis (less than 5 continuous days).
- C. The Contractor shall submit to the Engineer for approval a list of all Contractor's personnel intended to work at the site more than 5 continuous days. The list shall include the name, employer, and work phone number of each person. Upon approval by the Engineer, the Contractor shall complete a District-furnished identification badge application form for each eligible employee and make arrangement with the Engineer to have Contractor's employee photographs taken at the District for the purpose of obtaining District-furnished photographic identification badges. Approved application forms and valid photographic identifications will be required before issuance of District photographic identification badges.
- D. Planned occasional site access-The Contractor shall plan all occasional site accesses (less than 5 continuous days) in advance. The Contractor shall notify the Engineer of the name and employer of the Contractor's personnel requiring occasional site access at least 1 day in advance of each occasional site access. After sign-in, the District's security guard will issue a generic temporary badge to the occasional visitor. The occasional visitor shall return his/her badge to the security guard upon leaving the site.

- E. Emergency or unplanned site access—For emergency or unplanned access, as determined by Contractor and approved by the Engineer, and upon notification by the District's security guard, the Contractor's designee shall verify the identity of the Contractor's personnel requiring emergency or unplanned site access to District's security guard. After sign-in, the District's security guard will issue a generic temporary badge to the occasional visitor. The occasional visitor shall return his/her badge to the security guard upon leaving the site.
- F. Contractor shall ensure that all Contractor's personnel display their District-issued photographic identification badge or generic temporary badge in plain view at all times while on site. Any Contractor's personnel who do not display their photographic identification badge or generic temporary badge while on site will be required to leave the site.
- G. Lost or missing photographic identification badges shall be reported immediately to the Engineer. A generic temporary badge will be issued by the District's security guard. District will deduct \$100 for each lost or missing photographic identification badge from the Contract amount.
- H. Lost or missing generic temporary badges shall be reported immediately to the Engineer. A generic temporary badge will be issued by the District's security guard. District will deduct \$100 for each lost generic temporary badge from the Contract amount.
- I. Contractor shall maintain a list of Contractor's personnel in possession of a photographic identification badge. The Contractor shall record at a minimum the following information: employee name, employer, work phone number, badge issuance date, date when employee ceases working at the site, date when badge was missing or lost. Contractor shall submit updated badge lists to the Engineer on or before the fifth day of each month. District will deduct \$200 for each badge list not submitted on time from the Contract amount. Approved lists will be the basis for determination of the deductions for photographic badges not returned within the allowed time limit.
- J. Contractor shall collect and return to the District photographic identification badges from all Contractor's personnel within 30 days from the date of their employment termination or when their assignment on the site is complete. If the Contractor fails to return the badges within 30 days of the employee's termination or assignment completion, the District will deduct \$100 from the Contract amount for each photographic badge not returned on time.
- K. At the Completion of Work, Contractor shall return all District-issued photographic identification badges to the District. District will deduct \$100 from the Contract amount for each photographic badge unreturned or returned after the Completion of Work.



**14.10.03. Background Checks**

- A. The District reserves the right to request and receive such information as allowed by law and as required to complete a background check on any Contractor's personnel that must enter the site.
- B. The District reserves the right to deny access to the site to any person as allowed by law.

**14.10.04. Site Access Control**

- A. The District will maintain a security checkpoint at the Plant Entry Gate. The security checkpoint will be staffed by a District security guard during normal working hours and at other hours on an as needed basis. Roving guard(s) may also patrol the property.
- B. Unless otherwise specifically required in these Specifications, the entire site perimeter including all fences and gates are to remain intact and functional throughout the construction period. Fences and gates that are accidentally breached by the Contractor shall be restored by the contractor at no additional costs to the District at the latest by the end of the work day. Perimeter breaches shall be secured by the Contractor until the breaches have been closed to the satisfaction of the Engineer. For work requiring perimeter breaches, the Contractor shall work with the Engineer to arrange appropriate measures to secure the perimeter at the Contractor's cost. The Contractor shall promptly inform the District of any perimeter breaches. During working hours, unattended openings at breach locations shall be adequately secured by the Contractor. No unauthorized entries shall be allowed in these breaches including deliveries and Contractor's personnel entry.
- C. All vehicles entering the project site are subject to search by District guards.

**14.10.05. Mail and Postal Deliveries to the Project Site**

- A. Unless an exception is granted by the Engineer, Contractor shall not have United States Postal Service, Federal Express, UPS, or similar mail and package deliveries addressed to the PWTP address. Under no circumstance shall mail/packages be delivered to the reception areas of any District facility.
- B. However, if the Contractor elects to receive mail and package deliveries at the PWTP address, the Contractor shall provide a special mail and package receiving/holding facility at the Plant Entry Gate area for delivery of all Contractor's mail and packages. The exact location of this facility shall be subject to Engineer's approval.
- C. All mail and packages whether delivered to the Contractor's special plant receiving/holding facility or offsite point shall not be allowed into the main plant area until such time as they have been screened by Contractor's personnel in

accordance with the District's mail and package screening guidelines. Those guidelines are as follows:

Mail Handling:

- Contractor's staff should wear adequate protective clothing including gloves, respirator mask, etc. while handling material.
- Mail that must be opened is done so in an isolated area away from other staff and in a well ventilated location.
- Do not shake or bump; do not open, smell or taste the material. If suspicious material is identified, drop the material in a plastic lined garbage can, and then remove one glove at a time so that both gloves are removed without touching the skin and are self-contained. Seal the plastic bag and notify the Engineer.
- Wash hands with soap and water after handling materials, suspicious or not.
- Do not destroy or discard as evidence may be destroyed also.

Treat as Suspicious Any Material That:

- Either comes from an unknown source or contains no return address or one that cannot be verified as legitimate.
- Is marked "Hand Deliver" or other restrictive addressing.
- Comes in an unusual size or packaging.
- Contains excessive or foreign postage.
- Has stains, odors, wires.

**14.10.06. Productivity Lost for Non-Compliance with Security Measures**

- A. Costs and delays incurred by the Contractor due to security measures (e.g., deliveries or personnel held at the gate without badges or identification, refusal of package deliveries, etc.) shall not be cause for additional Contract time or additional compensation for the Contractor.
- B. Failure to comply with these security measures may lead to delay or stop of work with no additional Contract time or additional compensation granted to the Contractor.

**14.10.07. Payment**

- A. Full compensation, for doing all work and furnishing all materials required to comply with site security requirements, as specified in these Specifications, shall be considered incidental and included in the other items of work and no additional compensation will be made therefor.

## **SECTION 15. POLLUTION CONTROL**

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### **15.01. Water**

Oily, greasy or sediment laden substances or other materials that originate from the Contractor's operation and may degrade the quality of surface water or adversely affect aquatic life, fish, or wildlife shall not be allowed to enter, or be placed where they may later enter, any reservoir, river, creek, or stream.

The Contractor shall not increase the turbidity of any watercourse flowing past the construction site by taking all necessary precautions to limit the increase in turbidity as follows:

- a. where natural turbidity is between 0 and 50 Nephelometric Turbidity Units (NTU), increases shall not exceed 5 percent;
- b. where natural turbidity is greater than 50 NTU, increases shall not exceed 10 percent.

For cases in which the receiving water body is a dry creek bed or storm drain, waters in excess of 50 NTU shall not be discharged from the Contractor's operation.

The Contractor shall monitor the water turbidity changes. The discharge water measurements shall be made at the point where the discharge water exits the Contractor's water control system for tidal sites and 100 feet downstream of the discharge point for non-tidal sites. Natural stream turbidity measurement shall be made in the receiving water 100 feet upstream of the project diversion site. Natural stream turbidity measurement shall be made prior to initiation of project discharges, preferably at least 2 days prior to the commencement of operations.

Contractor's attention is directed to Section 16 –Storm Water Pollution Prevention

### **15.02. Noise Pollution and Vibration**

#### **15.02.01. Noise**

The Contractor is responsible for ensuring that noise produced by construction activities does not exceed the applicable local noise ordinance standards and is in full compliance with the performance standards set forth in this Article.

Unless noted otherwise, the Contractor shall comply with all applicable noise level rules, regulations and ordinances, and shall provide all necessary precautionary measures to comply with the noise regulations and ordinances.

In no case shall noise levels produced by the Contractor exceed any of the following maximum levels as measured at the Plant property line:

|                                  |        |
|----------------------------------|--------|
| Weekdays: 7 a.m. to 7 p.m.       | 75 dBA |
| Weekdays: 7 p.m. to 7 a.m.       | 50 dBA |
| Saturdays, Sundays, and Holidays | 50 dBA |

Steady, audible tone of equipment or machinery that must be left on continuously shall not exceed the above standards minus 5 dBa.

As a minimum, the Contractor shall exercise precautionary measures listed below. Installation of these measures shall in no way relieve the Contractor of the responsibility of compliance with the noise criteria.

- Air compressors and internal combustion engines shall be in good operating condition that meet or exceed original factory specifications and shall be equipped with high-grade mufflers, air-inlet silencers, where appropriate, and noise suppressers.
- All mobile or fixed noise producing machinery and equipment, including "package" equipment such as fans, cranes, arc-welders, air compressors, electrical operators and the like, shall be suitably housed, enclosed, shielded, equipped with noise control features, or muffled to meet the noise limits specified within this Article.
- All mobile or fixed noise producing equipment used by the Contractor that is regulated for noise output by local, state, or federal law shall comply with such regulation while in use. This shall include vehicles licensed for use on public highways.
- Electrically-powered equipment instead of pneumatic or internal combustion powered equipment shall be used, where feasible.
- Material stockpiles and mobile equipment staging, parking, and maintenance and equipment staging areas shall be located in those areas identified in Attachment C as far as practicable from homes and other such noise-sensitive receptors.
- The use of noise-producing signals, including horns, whistles, alarms, and bells shall be for safety warning and emergency purposes only.
- No project-related public address loudspeaker, 2-way radio, or music system including personal or vehicle radio, tape, or cd players or the like shall be audible at any adjacent noise-sensitive receptor.
- Trucks or other mobile equipment shall not use engine decompression ("Jake Brakes ") for deceleration on grades.
- The Contractor shall post readily visible informational signs at the entrance to the construction site indicating that the site is a "NOISE CONTROLLED ZONE" and that persons and machinery may be barred from the site for violations of the noise control plan and regulations.

#### **NOISE MONITORING AND COMPLIANCE**

The Contractor shall from time to time, as directed by the Engineer, take sound readings at various points along the Plant property line to monitor compliance with the noise criteria. Daily monitoring will be required during noise-generating construction activity as

determined by the Engineer. Measurements shall be focused on areas adjacent to residential areas such as along south and west property lines. Monitoring shall be performed using a Type 1 Sound Level Meter, as specified by the latest ANSI standards, measuring a dynamic range of 40-120 dB. Noise levels shall be A-weighted with a minimum sampling rate of 64 samples per second (Fast). Root Mean Square (RMS) sound pressure levels (SPLs) shall be expressed by the descriptors L(max) and Leq(h). Microphones shall be equipped with windscreens and shall be positioned as designated by the Engineer. Noise monitoring equipment shall be calibrated before each work shift. The noise monitor shall print data to a serial printer, providing immediate on-site results. The Contractor shall keep a copy of all documentation and submit a copy to the Engineer when requested.

If noise is found to be above maximum noise level allowed, the offending noise producing equipment or activity shall cease until the noise level is within the specified limit.

Full compensation for conforming to the requirements of this article including exercising precautionary measures, monitoring, submitting, and maintaining all reports and documentation shall be considered as included in the prices paid for the various contract items of work involved and no additional compensation will be allowed therefor.

#### **15.02.02. Vibration**

The Contractor shall not operate or permit the operation of any equipment or device that causes vibration exceeding the peak particle velocity of 0.1 in/sec along the Plant property line. The Contractor shall conduct vibration monitoring to monitor Contractor's compliance with the vibration level. If vibration is found to be above maximum level allowed, the offending vibration producing equipment or activity shall cease until the vibration level is within the specified limit.

#### **VIBRATION MONITORING AND COMPLIANCE**

This work shall consist of vibration monitoring as a means to control the vibration so as to not exceed the specified peak particle velocity along the Plant property line. The vibration monitoring shall be conducted at two locations: one along the South Property line and one along the West Property line near Bay Laurel Lane. Exact locations will be determined in the field by the Engineer.

At the above listed locations, vibration monitoring and recording shall be performed during the course of compaction activities and for other significant impact work as determined by the Engineer.

The first vibration monitoring prior to start of compaction activity shall establish the baseline for all subsequent recordings. The baseline recordings shall consist of uninterrupted recordings for a period of not less than 24 hours at the above listed locations. The Contractor shall have the equipment in place and functioning properly prior to any compaction activity within 50 feet of the south property line where it borders homes on El Grande Ave. and within 50 feet from homes along Bay Laurel Lane. No construction activity occurring within this zone shall occur unless monitoring equipment is functioning properly. The equipment shall be set up in a manner such that an immediate warning is

given when the resultant peak particle velocity equal to or exceeding 0.1 in/sec is produced.

Prior to performing any vibration monitoring, including the baseline vibration monitoring and during significant impact work, the Contractor shall submit to the Engineer a written plan detailing the procedures for vibration monitoring. Such details shall include:

- The name of the firm providing the vibration monitoring services.
- Description of the instrumentation and equipment to be used.
- Methods for mounting the instrumentation to the ground.
- Data collection analysis procedure.
- Number of vibration monitors to be utilized at each of the facilities specified herein.
- Means and methods of providing warning when particle velocity equals to or exceeds specified limits.
- Name of the responsible person designated by the Contractor.
- A contingency plan for alternative construction methods when particle velocity equals to or exceeds specified limits.

Once the vibration monitoring plan is approved by the Engineer, the vibration monitoring equipment shall be furnished and installed by the Contractor at the above locations. The 50 feet shall be measured from the source of vibration such as the column nearest to the actual compaction, the location of the equipment, or from the point of probable impact of any fallen structural elements, materials, equipment, or debris.

The vibration monitoring equipment shall be capable of continuous operation with instant monitoring results and shall conform to the following requirements:

- The velocity sensing transducers shall be capable of measuring velocities on the three perpendicular axis (i.e.,  $V_x$ ,  $V_y$ , and  $V_z$ ) simultaneously.
- Frequency response of the velocity transducers and data acquisition equipment shall cover the range from less than 5 Hz to more than 100 Hz. Sensitivity of the velocity transducers shall range below 0.001 inch per second to more than 2.000 inch per second.
- Velocity transducers shall be field calibrated prior to use.
- The data acquisition equipment shall be capable of simultaneously recording individual velocity transducers, in digital format, time-domain data (i.e., time vs. particle velocity) for each of the transducers.

The vibration shall be monitored continuously by the responsible person designated by the Contractor while significant impact work is in progress. The vibration monitoring equipment at each location shall operate continuously.

The vibration monitoring data shall be recorded contemporaneously and plotted continuously in ink on graph by the data acquisition equipment. The graph shall conform to the following:

- Each graph shall show time-domain wave traces (particle velocity versus time) for each transducer.
- The graph shall have the same vertical and horizontal axis scale.
- The resultant particle velocity shall be plotted on the graph instantaneously.

The equipment shall be set up in a manner such that an immediate warning is given when the resultant peak particle velocity is equal to or greater than 0.1 in/sec. The peak particle velocity shall be derived from the component particle velocity  $V_x$ ,  $V_y$ , and  $V_z$  and shall be equal to the square root of the sum of  $V_x^2 + V_y^2 + V_z^2$ .

The warning emitted by the vibration monitoring equipment shall be instantaneously transmitted to the responsible person designated by the Contractor by means of warning lights, audible sounds, or electronic transmission. The responsible person shall have the authority to stop the work causing the vibration.

When the peak particle velocity reading on monitoring equipment equals to or exceeds 0.1 in/sec, work shall immediately cease and the Contractor shall implement the approved contingency plan to reduce and maintain the monitoring equipment reading below 0.1 in/sec before resuming work. The Contractor shall immediately notify the Engineer every time the vibration equals to or exceeds 0.1 in/sec. After the completion of the baseline vibration monitoring and vibration monitoring during significant impact work at each of the locations designated herein, the Contractor shall submit to the Engineer a daily report documenting the results of the vibration monitoring. Each location shall have a separate report. The reports shall be signed by an engineer who is registered as a Civil Engineer in the State of California, who is experienced in and who has expertise in the field of vibration monitoring. The report shall include the following:

- Project identification, location, project name as shown on the project plans.
- Location of monitoring equipment, including address of monitored building or facility.
- Location of vibration source (i.e., pile driving equipment).

The District will retain an amount equal to 25% percent of the estimated value of the work performed during the estimate period in which the Contractor fails to submit the vibration monitoring reports conforming to the requirements of this section, as determined by the Engineer.



The Contractor's vibration-monitoring personnel which include those persons, firms, or entities providing vibration monitoring, recording, documentation and the production of the reports shall have the qualifications specified herein. These personnel may be on the staff of the Contractor. However, they shall not be employed nor compensated by subcontractors, or by persons or entities hired by subcontractors, who will provide other services or material for the project.

The Contractor's vibration-monitoring personnel shall include a qualified vibration Instrumentation Engineer who is a registered Professional Engineer in the State of California, and who has at least 4 years of experience in the installation and use of vibration-monitoring instrumentation and in interpreting instrumentation data. The Vibration Instrumentation Engineer shall:

- Be on site and supervise the initial installation of each vibration-monitoring instrument.
- Supervise interpretations of vibration-monitoring data.
- The Contractor's vibration-monitoring personnel shall be subject to the review of the Engineer.

Compliance with this section does not relieve the Contractor of full responsibility for damage caused by Contractor's operations as per "Indemnification and Insurance" of these special provisions.

Full compensation for furnishing all labor, materials, tools, equipment, and incidentals and for doing all work involving vibration monitoring, as specified in these specifications, and as directed by the Engineer, shall be included in the lump sum price bid for MOBILIZATION Bid Item No. 2.

### **15.03. Air Pollution**

Attention is directed to the BAAQMD regulations. No burning will be allowed on this project. Idling of internal combustion engines shall be held to an absolute minimum. All vehicles with internal combustion engines shall be fitted with spark arresters.

Except for certain operations, on-site idling of heavy duty diesel trucks with gross vehicular weight ratings of greater than 10,000 pounds shall be no more than 5 minutes per 13 CCR 2485. See Appendix B for a copy of the regulations and exceptions.

Rapid-cure cutback asphalt shall not be used in accordance with BAAQMD, Regulations 8, Rule 15.

Asbestos-containing serpentine material, as defined in the BAAQMD, Regulations 11, Rule 14, and 17 CCR 93106, shall not be used for surfacing.

**15.04. Spillage and Dust**

Spillage resulting from hauling operations along or across any public traveled way shall be removed immediately by the Contractor. The Contractor shall pay all expenses for removal of spillage.

Dust nuisances originating from the Contractor's operations either inside or outside the right of way shall be controlled at the expense of the Contractor in accordance with Article 5.10.

The Contractor shall exercise all necessary precautionary measures to control dust and to prevent spillage on public traveled ways. As a minimum, provide the measures listed below. Contractor's attention is directed to Article 15.09 regarding an Asbestos Dust Mitigation Plan. Exercising the measures below will likely reduce the potential impacts from asbestos dust; however, it shall not relieve the Contractor of the responsibility for compliance with applicable regulations and the submittal of an Asbestos Dust Mitigation Plan specified under Article 15.09.

- During construction, the Contractor shall damp sweep the public right-of-way adjoining the project site at the end of each work day sufficient to remove all visible debris and soil. On-site areas visible to the public from the public right-of-way shall be cleaned of debris, rubbish, and trash at least once a week.
- Water all active construction areas, unpaved access roads, parking areas and staging areas frequently but no less than twice each work day unless soils are already sufficiently moist to avoid dust. Alternatively, non-toxic soil stabilizers may be applied to control dust generation.
- Trucks hauling sediments and other loose material shall be covered and shall maintain at least 6 inches of freeboard.
- Tailgates of trucks shall be sealed.
- Trucks shall not leave tracks of dirt, soil, or debris on public right-of-way. Clean up any visible track-out immediately. The Contractor shall install a track-out prevention device designed to prevent track-out onto any paved public road.
- Exposed stockpiles shall be watered at least twice each day, including weekends and holidays, or enclosed, covered, or sprayed with non-toxic soil stabilizers.
- Previously graded or exposed inactive areas for ten days or more shall be sprayed with soil stabilizer or seeded.
- Traffic speeds shall be limited to 15 mph.
- Sandbags or other bank protections shall be installed to prevent silt runoff to roadways.

**15.04.01. Spillage and Dust Nuisance**

The Contractor shall remedy immediately any spillage and dust nuisance or deficiency arising from, or in consequence of Contractor's failure to perform the work specified under this Article. Upon the Contractor's failure to make immediate remedies reasonably determined by the Engineer to be necessary in the best interests of the public, the Engineer may employ private or public work forces and equipment to perform the work. The actual cost of employing such forces and equipment shall be doubled and then subtracted from the monies due, or that may become due, the Contractor. Such action(s) taken by the Engineer shall not preclude the District from taking other actions as deemed appropriate, and shall not relieve the Contractor of responsibility to comply with these Specifications.

**15.05. Soil Contamination**

The Contractor shall not allow regulated materials to spill on District property or easements or other public or private right of way. Any spillage of regulated materials resulting from the Contractor's operation shall be removed immediately by the Contractor at the Contractor's expense.

**15.06. Storage of Regulated Materials**

The storage and use of any regulated materials shall meet all requirements of local, state, and federal regulatory agencies. It shall be the Contractor's responsibility to satisfy the requirements of any regulatory agency for the storage, monitoring, usage, transportation, safety, reporting, or any other requirements regarding the management of regulated materials on and off the project site(s).

Prior to the storage or use of any regulated materials, the Contractor shall submit to the Engineer a "Regulated Materials Storage and Use Plan" (Plan). The Plan shall include: an inventory of all regulated materials to be stored or used at the project site (which equals or exceeds any of the following separate material phases: 55 gallons liquid, 200 cubic feet of compressed gas, or 500 lbs. solid); the maximum quantity of materials to be stored; the purpose of the materials; the MSDS for each material; a detailed description of how the materials will be stored (including secondary containment where required by applicable regulatory agencies); a site plan drawn to scale; storage area maps drawn to scale; a detailed description of how the materials will be monitored; a detailed description of how wastes from the materials will be stored and/or disposed; and a detailed description of the procedures to be followed in the event of an uncontrolled release of the regulated materials.

The Plan shall be submitted to the Engineer for review, in accordance with Article 9.02, and acceptance at least 30 days prior to the storage or use of any regulated materials. The Plan shall be updated and submitted to the Engineer by the Contractor upon the addition of new regulated material not listed previously or a 100 percent (or greater) increase in quantity of a regulated material which is listed in the Plan.

**15.07. Imported Earthfill Material**

The Contractor shall not import earthfill material that is contaminated with regulated materials.

If the Contractor uses imported earthfill materials that are, or are found to be, contaminated by regulated materials, the Contractor shall immediately remove the contaminated material and dispose of it in accordance with all applicable laws, ordinances, and regulations; conduct necessary sampling and monitoring to verify that all contaminated material has been removed; and verify to the satisfaction of the District and/or appropriate regulatory agencies that any surrounding areas, materials, soils, or waters have not been impacted by the contaminated materials. The subsequent disposal of the contaminated material shall be the responsibility of the Contractor. No compensation will be made to the Contractor by the District for removal, disposal, replacement, chemical analysis, or any other costs associated with the removal, disposal, and replacement of the contaminated material.

For each imported earthfill material to be used on the project, the Contractor shall submit to the Engineer for review and acceptance, in accordance with Article 9.02, an "Imported Materials Certification Form." Copies of the form are available from the Engineer. If the imported earthfill materials are to be obtained from more than one source, the Contractor shall submit a separate form for each source of earthfill material. This form shall be submitted for review and acceptance at least 30 days prior to the delivery of the earthfill material to the construction site.

**15.08. Regulated Material Discharges or Releases**

The Contractor is responsible for all discarded or abandoned material, including regulated materials and hazardous wastes, generated as a result of the Contractor's operations unless specifically noted otherwise in these Specifications. The Contractor's attention is directed to Article 5.06.

In the event of a discharge or release of a regulated material from the Contractor's operation, the Contractor is responsible for notifying the proper authorities, providing containment of the material, identifying the contaminants, investigating the extent of all contaminants, removing contaminated materials, disposing of contaminated materials, and verifying the removal of all contaminated materials. These activities shall be performed to the satisfaction of the Engineer at the Contractor's cost. The Contractor shall perform any work and provide any and all documentation required by the District and federal, state, and local agencies. The Contractor shall provide copies of all correspondence and reports related to these activities to the Engineer. All work performed to accomplish these activities shall be in accordance with federal, state, and local regulations.

In the event of a discharge or release of regulated material, the Contractor shall notify the Engineer immediately. Immediate notifications may be verbal. The Contractor shall submit a detailed written report to the Engineer within 24 hours of the discharge or release. The written report shall include: a description of events leading to the discharge or release; action taken to prevent or control the discharge or release; a description of the discharge or release; the quantity of material discharged or released; method used to determine quantity discharged or released; type of material discharged or released; MSDS for the

material(s) involved; a description of the area affected by the discharge or release; agencies notified and date and time of notification; and status of the cleanup. The report shall also include the proposed investigation, cleanup, and verification sampling activities.

All expenses incurred by the Contractor as a result of or to remedy the discharge or release of regulated materials shall be borne solely by the Contractor and no additional compensation will be made therefore. The Contractor shall be responsible for signing the Nonhazardous Waste Manifests and the Hazardous Waste Manifests and paying the State Superfund fees, the generator's fees, and other costs of disposal of these wastes unless specifically stated otherwise in these Specifications. The Contractor shall be identified as the owner and generator of the wastes associated with unauthorized releases or discharges.

#### **15.09. Serpentine Soils with Naturally Occurring Asbestos**

Serpentine soils with naturally occurring asbestos have been discovered at the site of the ozone generator and ozone contactor buildings and transition risers with elevated levels of naturally occurring asbestos. Based on the Naturally Occurring Asbestos Preliminary Site Investigation Report - July 2003, five of the thirteen composite in situ samples obtained by District's consultant during the investigation were reported to contain naturally occurring asbestos (NOA) of 0.25 percent or more. None of the samples were found to contain NOA in excess of 5.0 percent which meets the California Air Resources Board definition for asbestos containing serpentine.

The Soil Sampling and Chemical Analysis done by Light, Air, and Space Construction (Attachment D) indicated that the shallow soils sampled may not contain NOA above the 0.25 percent level and may be reused on site.

The Contractor shall comply with the following regulations related to asbestos: 8 CCR 1529, 8 CCR 5208, 17 CCR 93105, 17 CCR 93106.

##### **15.09.01. Site Health and Safety Plan**

The Contractor shall prepare a Site Health and Safety Plan in accordance with Section 02170 to address the potential risk to workers from exposure to naturally occurring asbestos.

##### **15.09.02. Asbestos Dust Mitigation Plan**

To reduce the potential impact to the public from dust that may contain naturally occurring asbestos generated from his operations, the Contractor shall prepare and submit to the BAAQMD with a copy to the Engineer, an Asbestos Dust Mitigation Plan. The Plan shall include dust mitigation practices which are sufficient to ensure that visible dust does not cross the property line consistent with the Asbestos Airborne Toxic Control Measure for Construction, Grading, Quarrying, and Surface Mining Operations issued by the California Air Resources Board (17 CCR 93105). The Plan shall be reviewed and approved by the BAAQMD prior to the start of construction, and implemented throughout the duration of ground disturbing activities. The Plan shall include all components as identified under 17 CCR 93105. See Appendix B for a copy of the Asbestos Dust Mitigation Plan Application.

**15.09.03. Management of Natural-Occurring Asbestos Containing Materials**

The Contractor's attention is directed to Section 02170 for requirements for management of the excavated materials, and the submittal of an Excavated Materials Management Plan to the Engineer for approval.

**15.10. Site Maintenance and Cleanup**

During construction, the Contractor shall keep the work site, areas adjacent to the work site, and access roads in an orderly condition, free and clear from debris and discarded materials. Care shall be taken to prevent spillage when hauling is done. Any spillage or debris resulting from Contractor's operation shall be immediately removed by the Contractor. The Contractor shall not sweep, grade, or flush surplus materials, rubbish, debris, or dust into storm drains or stream channels.

Upon completion of work, the Contractor shall remove from the work site and areas adjacent to the work site, all building materials, debris, unused materials, concrete forms, and other materials belonging to the Contractor or used during construction. All access roads and maintenance roads shall be graded, removing wheel tracks and smoothing up such roads.

**15.11. Payment**

Unless included under other bid items, full compensation for compliance with the requirements of this Section shall be considered as included in the price paid for other items of work and no separate payment will be made therefor.

## **SECTION 16. STORM WATER POLLUTION PREVENTION**

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### **16.01. Compliance with NPDES General Permit**

#### **16.01.01. General**

The Contractor shall comply with the requirements of the State Water Resources Control Board (SWRCB) National Pollutant Discharge Elimination System (NPDES) General Permit for Discharge of Stormwater Associated with Construction Activity (Construction General Permit Order # 99-08-DWQ). A copy of this NPDES General Permit is provided in Appendix A. In compliance with this NPDES General Permit, the Contractor shall prepare and submit to the Engineer the SWPPP for all work, including the Contractor's storage, maintenance, staging, and work areas within or outside the right of way in accordance with the Article 9.02.

#### **16.01.02. Storm Water Pollution Prevention Plan (SWPPP)**

##### **A. SWPPP Submittal**

The Contractor shall prepare and submit to the District the SWPPP as required under General Permit for Discharge of Stormwater Associated with Construction Activity. The SWPPP shall be based on a template available from the California BMP Handbooks website at [http://www.cabmphandbooks.com/Documents/Construction/Appendix\\_B.pdf](http://www.cabmphandbooks.com/Documents/Construction/Appendix_B.pdf), and the SWPPP checklist available from the State of California at [http://www.waterboards.ca.gov/stormwtr/docs/const\\_swppp.doc](http://www.waterboards.ca.gov/stormwtr/docs/const_swppp.doc). The SWPPP shall incorporate the pollution control practices specified herein and any others as required to comply with the NPDES General Permit.

The SWPPP shall be certified and stamped by a Registered Civil Engineer in accordance with applicable regulations

The District will make available the following: base maps for Contractor's use in preparing the vicinity and site maps for General Permit; a copy of pre-existing site and site design information; a copy of the completed Notice of Intent, if required. Post-Construction Storm Water Management Section, will be prepared by the District and provided to the Contractor for inclusion into the SWPPP.

The SWPPP will be reviewed by the Engineer for compliance with the regulations of the SWRCB. Nothing in Section 16 of these Specifications shall be construed to impose liability on the District or any of its officers, agents, representatives, or employees for the incompleteness of the SWPPP or any inaccuracies contained in the SWPPP. Review by the Engineer will not relieve the Contractor of any responsibility for the accuracy of assumptions, data, and information used and procedures contained in the Contractor's SWPPP or the adequacy thereof.

The SWPPP shall be revised and/or amended by the Contractor, as necessary, during the progress of work to comply with local, state, and federal regulations and the requirements of these Specifications. All revisions and amendments shall be submitted to the Engineer in accordance with the Article 9.02. Revisions and/or

amendments to the SWPPP shall be considered incidental to this item of work and no additional payment shall be made therefor.

The District will prepare and file a Notice of Intent with the SWRCB for this project.

**B. Availability of the SWPPP**

The Contractor's personnel supervising the earthwork, site work, erosion control, sedimentation control, and inspecting erosion controls shall be required to read the SWPPP. A copy of the SWPPP shall be maintained at the construction site by the Contractor and shall be available at all times for review by all contractors, District, or regulatory agency personnel.

**16.01.03. Implementation of Storm Water Pollution Prevention Measures**

The BMP listing below and the pollution prevention and control measures specified herein are not intended to be a complete listing of BMPs for stormwater pollution prevention and control. The Contractor shall be responsible to implement all BMPs applicable to the project construction in complying with the NPDES General Permit.

**A. BMP Implementation**

Stormwater BMPs shall be in accordance with California Stormwater Quality Association "Stormwater Best Management Practice Handbook," Construction, 2003, which is available at [www.cabmphandbooks.com](http://www.cabmphandbooks.com).

At a minimum, the Contractor shall incorporate and implement the following stormwater BMPs as part of the SWPPP:

*Erosion Control BMPs:*

- Hydroseeding (EC-4) and Section 02940 of these Specifications
- Soil Binders (EC-5)

*Sediment Control BMPs:*

- Silt Fence (SE-1)
- Street Sweeping and Vacuuming (SE-7)
- Sandbag Barrier (SE-8)
- Straw Bale Barrier (SE-9)
- Storm Drain Inlet Protection (SE-10)

*Wind Erosion Control BMPs:*

- Wind Erosion Control (WE-1)

*Tracking Control BMPs:*

- Stabilized Construction Entrance/ Exit (TR-1)



- Stabilized Construction Roadway (TR-2)

*Non-Stormwater Management BMPs:*

- Dewater Operations (NS-2)
- Clear Water Diversions (NS-5)
- Vehicle and Equipment Fueling (NS-9)
- Vehicle and Equipment Maintenance (NS-10)

*Waste Management and Materials Pollution Control BMPs:*

- Material Delivery & Storage (MW-1)
- Stockpile Management (WM-3)
- Spill Prevention and Control (WM-4)
- Hazardous Waste Management (WM-6)
- Contaminated Soil Management (WM-7)
- Liquid Waste Management (WM-10)

A copy of the fact sheets of the above BMPs is attached in the Appendix E.

Unless noted otherwise, the Contractor shall design, construct, operate, inspect, and maintain the BMPs in accordance with the instructions provided in the fact sheets from the California Storm Water Quality Association "Stormwater Best Management Practice Handbook", Construction, 2003.

**B. Stormwater Runoff**

The Contractor shall designate separate areas for loading, unloading, and storage of construction materials; for storage and/or maintenance of vehicles and equipment used in constructing the work; for concrete truck wash down if concrete will be placed as part of this work; and for temporary storage of site debris, excess construction materials, demolition materials, excess excavated soil, and rubbish resulting from the work. Construction materials include, but are not limited to, any material used in the construction of the work, paper, packing material, fuel, oil, hydraulic fluid, chemicals, polymers, paint, solvents, glue, fertilizers, defoliants, soil sterilants, herbicides, pesticides, disinfectants, reactants, construction equipment, soil, vegetation, and demolition materials.

Enclosures or flow barriers shall be erected by the Contractor around these designated areas to prevent storm water flows from entering the designated areas and to prevent sediments and other pollutants discharged in storm water flows from leaving the designated areas.

If stormwater flows enter the designated areas, the Contractor shall determine if the stormwater has become contaminated or may be allowed to be discharged to the storm drains or stream channels. If the storm water flows have become contaminated due to contact with the construction materials, the Contractor shall provide for disposal of the storm water flows at no additional costs to the District in

a manner acceptable to the District and/or the San Francisco Bay RWQCB. The Contractor shall immediately notify the Engineer of incident(s) of storm water flows entering designated areas and decisions and measures taken to remedy the situation.

If discharges occur in the designated areas, the Contractor shall immediately notify the Engineer and, at the Contractor's sole cost, contain and cleanup the discharge to prevent spilled material from entering storm drains, stream channels, or groundwater, or from being absorbed by the underlying pavement or soil. For discharges of regulated materials, the Contractor's attention is directed to Article 15.08.

**C. Erosion and Sediment Control Implementation**

The purpose of erosion and sediment control is to eliminate discharge of sediment from the work site to the storm drains and stream channels. The contractor shall preserve existing vegetation and revegetate, if necessary, as soon as feasible. At a minimum, the Contractor shall complete placing erosion and sediment control measures on October 1st, and maintain the control measures, and make sure they remain effective until April 15th of the following year. In the event of a predicted storm during the non- rainy season between April 15th and October 15th, the Contractor shall immediately install the erosion and control measures to control sediment discharges.

For exposed soils, the Contractor shall cover, drain, or otherwise protect the surfaces to minimize erosion. Erosion control measures may include, but are not limited to: temporary pavement, jute matting, hydro-seeding, protective sheets, mulch to provide temporary soil protection, upgradient water diversions such as culverts, or water bars; sediment barriers such as straw bales, silt fences, or sandbags; or appropriate surface contouring.

The Contractor shall ensure that stormwater and/or stream flows can flow through the sediment barriers without causing flooding, or the Contractor shall provide temporary flow diversion measures to route excessive surface water flows around the sediment barriers. In the event that sediment barriers cause flooding, the Contractor shall respond immediately to remedy the situation.

The Contractor shall implement and maintain the erosion control measures and sediment barriers. The Contractor shall be responsible for inspecting and maintaining the erosion controls and sediment barriers at least once every day. The inspections are to be documented in accordance with the requirements of the General Permit. If the erosion controls and/or sediment barriers do not operate properly and sediment or other construction materials enter storm drains or stream channels, the Contractor shall notify the Engineer. If the Engineer determines that the storm drains or stream channels require cleaning or other remedial work, the Contractor shall provide this cleaning or other remedial work at no additional cost to the District. The Contractor shall be responsible for obtaining permits from the appropriate regulatory agencies for this cleaning or other remedial work.

**D. Special Requirements**

The Contractor shall implement stormwater pollution BMPs to the catch basins in the following areas outside the Plant property line:

Whitman Way between Bay Laurel Lane and Vista Del Mar  
Bay Laurel Lane from Whitman Way to 300 feet North of Whitman  
Vista Del Mar from Whitman Way to 250 feet South of Whitman

The catch basins shall be protected with appropriate protection types per Storm Drain Inlet Protection BMP (SE-10).

**16.01.04. Monitoring and Reporting****A. Monitoring and Inspecting**

The Contractor shall monitor and inspect all stormwater pollution prevention and control measures at least once every day, and shall immediately repair or replace any SWPPP facilities that are not operating properly.

The Contractor shall develop a Daily Inspection Documentation Form for maintaining on-site daily written records of monitoring and inspection results. The Daily Inspection Documentation Form shall be submitted with the SWPPP for review and acceptance prior to the implementation of protective measures. Copies of the daily Inspection Documentation Forms shall be provided to the Engineer by the Contractor. The Contractor shall retain all records of inspections, compliance certifications, and noncompliance notifications for a period of at least 3 years. The District and the San Francisco Bay RWQCB shall have access to and the right to examine any of these records.

Prior to the raining season and no later than September 1st each year, the Contractor shall submit to the Engineer an erosion and sediment control implementation plan. The plan shall describe the erosion and sediment control measures, the status, and the implementation schedule for the incoming rain season.

**B. Annual Certification**

The Contractor shall certify annually that its construction activity is in compliance with the requirements of the SWRCB, NPDES General Permit for Stormwater Discharges Associated with Construction Activity, and the Contractor's SWPPP. Certifications shall comply with the requirements of the General Permit. This certification shall be provided to the District in writing by July 1 of each year. Certification is not required if the Notice to Begin Work is issued after July 1 and the Engineer determines in the final inspection that the work has been completed before July 1 of the following year. The certification shall be based upon the monitoring and inspection specified herein. If the Contractor cannot certify compliance by July 1 due to noncompliance, as noted below, the Contractor shall certify compliance following achievement of compliance.

The Contractor shall notify the District and the San Francisco Bay RWQCB in writing, as required by the General Permit, if the Contractor cannot certify compliance in accordance with the requirements of the previous paragraph.

The Contractor shall also notify the Engineer verbally of any incidents of noncompliance within 24 hours of identification of noncompliance. Written noncompliance notification shall be submitted to the District and the San Francisco Bay RWQCB within 30 days of identifying a noncompliance incident. The notification shall include the type(s) of noncompliance, describe the actions necessary to achieve compliance, and include a time schedule, subject to modification by the San Francisco Bay RWQCB, indicating when compliance will be achieved.

**C. Final Certification**

Following completion of the work and the final inspection, the Contractor shall certify that construction activity has been completed, that all elements of the SWPPP have been implemented (excepting Post-Construction Stormwater Management), that construction and equipment maintenance waste have been disposed of properly, and that the site(s) is in compliance with all local stormwater management requirements, including erosion/sediment control requirements, policies, and guidelines. This certification shall be provided to the District in writing before acceptance of the work by the Board of Directors.

**16.01.05. Regulatory Fines**

The Contractor shall be responsible for any penalties or fines imposed upon the District by the RWQCB or other regulatory body due to the Contractor's noncompliance with the requirements of Article 16.01, except for any penalties or fines imposed upon the District for noncompliance with the "Post-Construction Stormwater Management" section of the SWPPP following the completion of construction. The actual cost of such penalties or fines will be subtracted from the amount due, or that may become due, the Contractor.

**16.01.06. Stormwater Pollution Nuisance**

The Contractor shall remedy immediately any public nuisance or deficiency arising from, or in consequence of Contractor's failure to perform the work specified under this Article. Upon the Contractor's failure to make immediate remedies reasonably determined by the Engineer to be necessary in the best interests of the public, the Engineer may employ private or public work forces and equipment to perform the work. The actual cost of employing such forces and equipment shall be doubled and then subtracted from the monies due, or that may become due, the Contractor. Such action(s) taken by the Engineer shall not preclude the District from taking other actions as deemed appropriate, and shall not relieve the Contractor of responsibility to comply with these Specifications.

**16.01.07. Payment**

Full compensation for doing all work necessary to prepare the SWPPP and to design, furnish, install, inspect, and maintain the stormwater BMPs and other required pollution prevention and control measures, including all materials, labor, equipment, service, supervision, documentation, and submittals shall be included in the lump sum price bid for STORM WATER POLLUTION PREVENTION PLAN, Bid Item No. 1.

## **SECTION 17. EXTRA WORK**

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### **17.01. Extra Work as Directed by the Engineer**

This bid item has been included to provide for new and unforeseen work that is classed as Extra Work, when the Engineer determines that the work is within the original scope of the contract. Extra Work shall be approved in writing by the Engineer.

Extra Work shall be paid for on a Cost of Work basis (labor, materials, and equipment as specified under Articles 5.04.02. and 5.04.04) or as agreed to by the Engineer and Contractor.

The Contractor's attention is directed to Article 5.05, "Change of Contract Time."

The amount of expenditure under this item may vary from zero to the total amount of the item, but will not exceed it. This amount may constitute the sum of several modifications. The Engineer will notify the Contractor in writing when a portion of the work being performed will be paid for under this item.

All bidders shall bid the amount shown on the Listing of the Bid Items for EXTRA WORK, AS DIRECTED BY THE ENGINEER, Bid Item No. 38. This amount is estimated only. Final payment shall be based on the actual amount of extra work performed by the Contractor.

Daily Extra Work Reports shall be submitted on forms to be furnished by the District.

## **TECHNICAL PROVISIONS**

## **SECTION 02170**

### **ENVIRONMENTAL MANAGEMENT OF EXCAVATED MATERIALS**

#### **PART 1 – GENERAL**

##### **1.01 SUMMARY**

- A. This Section alerts the Contractor that work in this Contract may involve working in environments that may be hazardous, contaminated, or non-hazardous.
- B. Such hazardous, contaminated, and non-hazardous environments may include, but are not limited to hazardous and non-hazardous materials, soils, groundwater and storm water; serpentine soils that contain naturally occurring asbestos. The Contractor's attention is directed to Article 15.09
- C. Hazardous, and non-hazardous waste shall only be disposed at a certified and permitted California landfill, or an equivalent out-of State landfill.
- D. The Contractor is hereby notified that any screening or crushing operations of excavated materials cannot proceed without the appropriate BAAQMD, and Cal-EPA/DTSC permits.

##### **1.02 RELATED SECTIONS**

- A. Article 15.09 – SERPENTINE SOILS WITH NATURALLY OCCURRING ASBESTOS
- B. Section 02230 – DEMOLITION, SITE CLEARING, AND MOBILIZATION
- C. Section 02315 – EXCAVATING, BACKFILLING, COMPACTING, AND GRADING
- D. Section 02810 – IRRIGATION SYSTEM
- E. Section 02900 – LANDSCAPE PLANTING

##### **1.03 CITED REFERENCES**

"Naturally Occurring Asbestos Preliminary Site Investigation Report, Penitencia Water Treatment Plant, San Jose, CA" Prepared July 2003, E8152-06-02, GeoCon Consultants, Inc.

"Soil Sampling and Chemical Analysis, Landscaping Sample Locations Santa Clara Valley Water District Penitencia Water Treatment Plant, San Jose, CA," Project No. 0617, Prepared June 2, 2006, Light, Air, and Space Construction Company.

##### **1.04 SUBMITTALS**

- A. General: Contractor shall submit the following:
  - 1. Site Health and Safety Plan



2. Hazardous Waste Manifest Documents
  3. Laboratory selection and proof of CA DOHS certification
  4. Disposal facility selection and proof of acceptance of the material
  5. Excavated Materials Management Plan
  6. Asbestos Dust Mitigation Plan
- B. The Contractor shall prepare a project specific *Site Health and Safety Plan* in conformance with the California's Title 8 CCR (8 CCR), Section 5192, "Health and Safety for Hazardous Waste Operations and Emergency Response."
1. The plan shall be submitted to the Engineer for review and acceptance at least 15 days prior to beginning any work in areas containing contaminated soil and sediment (hazardous waste).
  2. The Site Health and Safety Plan shall be prepared by a certified industrial hygienist and comply with the applicable Cal-OSHA rules and regulations in effect at the time the activity is being conducted.
- C. The Contractor shall be responsible for implementation of an effective *Injury and Illness Protection Plan* (IIPP) which is required by 8 CCR Section, 1509 (Construction Safety Orders) and 3203 (General Industry Safety Orders).
- D. The Contractor shall also comply with the requirements in ER 385-1-92, "Safety and Occupational Health Requirements for Hazardous, Toxic and Radioactive Waste Activities."
- E. The Contractor shall prepare and implement an Excavated Materials Management Plan. The Excavated Materials Management Plan shall describe in detail how the contractor plans to manage the excavated materials that contain the naturally occurring asbestos to meet all federal, state, and local laws and regulations. The definition of management of the excavated materials, shall include, but not be limited to, the transportation, transfer, recycling, disposal, handling, processing, storage, and treatment of said materials. The Plan shall be prepared and certified by a California licensed professional engineer, a Cal/OSHA Certified Asbestos Consultant, or a California licensed engineering geologist, who has had five years of experience in working with asbestos containing materials or hazardous waste. The purpose of the plan is to demonstrate how the contractor plans to comply with all applicable regulations and the requirements of these specifications.

The Plan shall, at a minimum, include the following components:

1. Introduction
2. Sampling data (provided by District)

3. Maps showing locations where asbestos containing materials are expected to be encountered (provided by District).
4. Description of the anticipated construction activities that would disturb the asbestos containing materials, including, but not limited to:
  - a. Handling and processing of the materials.
  - b. Any treatment or mixing of the materials on-site.
  - c. Plan for re-using the materials on-site.
  - d. Stockpiling or storage of the material, if any, including descriptions of containment methods and labeling requirements.
  - e. Transporting the material off-site, if any.
5. Description of the applicable regulations.
6. Description of the best management practices that Contractor plans to implement to comply with the regulations in performing the above operations.
7. Disposal plan, including selection of landfill and proof of acceptance of the materials from the landfill.

#### 1.05 GENERAL MANAGEMENT OF EXCAVATED MATERIALS

- A. The public shall not have access to the "work" area. Construction areas should be secured to prevent any access by the public.
- B. The Contractor is responsible for the excavation, loading, handling, transportation and disposal of all surplus waste excavated soils (including serpentine), meeting requirements of a certified and permitted California landfill or an equivalent out-of State landfill. All such disposal activities shall require the approval from the Engineer for disposal of any waste and the selected disposal facility.
- C. The Contractor is responsible for the selection of a facility acceptable to the Engineer. It is the Contractor's responsibility to meet landfill requirements for disposal. The Contractor may submit soil test results in the "Soil Sampling and Chemical Analysis, Landscaping Sample Locations" report by Light, Air, and Space Construction Company to a Class III Landfill for review and confirmation of acceptance.
- D. The Contractor shall conduct all soil and ambient air sampling and analysis as necessary, including personal air monitoring as required by law.
- E. The Contractor shall inform the Engineer in writing and obtain Engineer's approval prior to any sale, supply, or offer to sell any excavated material. The Contractor shall similarly comply with Bay Area Quality Management District

#### ENVIRONMENTAL MANAGEMENT OF EXCAVATED MATERIALS

(BAAQMD)'s Regulation 11, Rule 14 for asbestos-containing serpentine (Further information may be found at <http://www.baaqmd.gov/regs/rq1114.pdf>), the California Code of Regulation (CCR), In such a case, the Contractor at its own expense shall perform any all engineering and chemical testing as required by the City and by federal, state and local statutes, laws, regulations and policies.

- F. Asphalt, concrete, aggregate base, vegetation, debris, wood, obstructions, and other organic, unsound or deleterious matter shall be excavated separately from the soil layer, and shall become the property of the Contractor. The removal, management, transportation and disposal of asphalt, concrete, aggregate base, vegetation, debris, wood, obstructions, and other organic, unsound or deleterious matter shall be incidental to its respective bid item. Soils of different waste disposal classification shall be excavated, managed and transported separately, with no mixing of the different types of wastes.
- G. For work in this Contract, the Contractor shall take into account the productivity losses, if any, due to but not limited to encountering and managing hazardous or non-hazardous materials, the use of respirators and personal protective equipment. The Engineer will not pay any additional compensation to the Contractor due to encountering and managing hazardous or non-hazardous materials, use of respirators, and personal protective equipment.
- H. All costs associated with the temporary stockpiling of soils shall be borne by the Contractor. No additional payment shall be made therefore. Such related costs include, but are not limited to dust control, vacuum and wet sweeping, covering of stockpiles, multiple handling and transportation, multiple staging, work sequencing or rescheduling, time loss and standby time due to the duration of storage, and complying with federal, state and local requirements.

#### 1.06 DEFINITIONS

- A. Generator: The District is the "generator," as defined in Section 66260.10 of Article 2, Chapter 10, Division 4.5 of Title 22 of the California Code of Regulations (CCR) and in Title 40, Code of Federal Regulations (CFR) of any excavated hazardous waste. The District will be responsible as the generator to the extent of the law.
- B. Waste: Any discarded material of any form as defined by the Code of federal Regulations 40 CFR 261.2 (<http://www.access.gpo.gov/nara/cfr>) and the California Code of Regulations 22 CCR 66261.2 (<http://ccr.oal.ca.gov>).
- C. Hazardous Waste: A material determined to be a waste. This may include excavated material, asbestos, loose and peeling lead-based paints and any other material that is regulated by and requires management, handling, transport, treatment, storage and disposal according to the requires management, handling, transport, treatment, storage and disposal according to:
  - 1. The requirements of the Federal Resource Conservation Recovery Act (RCRA) and the associated regulation 42 U.S.C. 6901 et seq: (<http://www.access.gpo.gov/congress/cong013.html>), 40 CFR Part 260 et seq.

2. The requirements of the California Hazardous Waste Control Law: (<http://cwc.losrios.cc.ca.us/~hodappd/20a/callaw/index.htm>) and the associated regulations (Health and Safety Code 25000 et seq. (<http://www.leginfo.ca.gov/calaw.html>) and 22 CCR 66260 et seq.).
- D. Management of excavated materials or "management" means transportation, transfer, recycling, recovery, disposal, handling, processing, storage, and treatment of excavated materials as per federal, state and local laws and regulations.
- E. Soil means earth material composing the superficial geologic strata (material overlying bedrock), consisting of clay, silt, sand, or gravel size particles as classified by the U.S. Soil Conservation Service. Soil does not include asphalt, concrete, aggregate base, vegetation, debris, wood, obstructions, and other organic, unsound or deleterious matter.
- F. The following soil classifications with corresponding requirements are established solely for the purpose of payment for the transportation and disposal of the surplus waste excavated materials:
  1. Federal Class 1 (RCRA) hazardous waste is waste excavated material that is classified as Federal (RCRA) hazardous waste, requires treatment and disposal at a Class 1 RCRA treatment/disposal facility or a similarly permitted out-of-state facility and requires transport by a registered hazardous waste transporter.
  2. California Class 2 Waste (Class 2) is non-hazardous waste, and is not a California or Federal hazardous waste. It requires disposal at a California Class 2 disposal facility or at a similarly permitted out-of-state facility or at a similarly permitted out-of-state facility without the need of a registered hazardous waste transporter.

#### 1.07 SITE HEALTH AND SAFETY

- A. The *Site Health and Safety Plan* shall conform to requirements of Title 29 CFR 1910.120, Title 8 CCR, and other applicable regulations. The *Site Health and Safety Plan* shall include at a minimum:
  1. Risk or hazard analysis for each activity to be performed.
  2. Training requirements for employees including use of personal protective equipment, work practices to minimize risk, use of engineering controls and equipment, medical surveillance requirements.
  3. PPE to be used for each site task.
  4. Medical surveillance program.
  5. Frequency and types of air monitoring, personnel monitoring, monitoring techniques and maintenance of equipment.
  6. Site control measures.

7. Decontamination procedures.
  8. Emergency response plan.
  9. Spill containment program.
- B. The Contractor shall provide sufficient numbers of properly trained personnel who may come in contact with, may be exposed to, disturb, operate equipment or otherwise excavate, handle, transport and dispose hazardous or contaminated excavated material. Training requirements are as defined in the activity-specific *Site Health and Safety Plan* to be prepared by the Contractor.
- C. The District will not grant extensions of time or increase in payment for costs associated with the Contractor's inability to provide properly trained personnel, costs of training Contractor's workers, hiring of required personnel.

#### 1.08 REGULATORY INDEMNIFICATION

- A. The Contractor shall retain, and the District will not indemnify against, any liability of the Contractor resulting from the activities or duties, which are the responsibility of the Contractor under the terms of this Contract. This includes, but is not limited to, liability arising from the arrangement of transportation of any excavated material, whether on- or off-site. Therefore, the District will not assume any liability, present or future, incurred by the Contractor by reason of these activities.
- B. The Contractor is specifically alerted to, and shall familiarize itself and its subcontractor(s) to the liability statutes of:
1. The comprehensive Environment Responses, Compensation, and Liability Act (CERCLA) of 1980 found in 42 USC, Section 9601 et seq.
  2. The Superfund Amendments and Re-authorization Act (SARA) of 1986 found in 42 USC, Section 9601 et seq.
  3. The California Hazardous Substance Account Act (HSAA) of 1981 found in California Health and Safety Code, Section 25300 et seq.
  4. California Health and Safety code (H&SC), Division 20, Regulations and CCR 22 Section 6600 et seq.
  5. BAAQMD Regulation 6 for Particulate Matter and Visible Emissions (<http://www.baaqmd.gov/regs/rq0600.pdf>) and Regulation 11 for Hazardous Pollutants (<http://www.baaqmd.gov/regs/rulereg.htm>).
- C. The Contractor shall be responsible for all liability and costs necessary to prevent its own or subcontractors' operations from violating any federal, state, or local statutes, laws, regulations and policies.

#### **1.09 TRANSPORTATION AND DISPOSAL OF EXCAVATED MATERIALS**

Transportation and disposal of excavated materials shall be performed in accordance with the Excavated Materials Management Plan.

#### **1.10 BILL OF LADING PROCEDURES FOR CLASS 2 MATERIAL OR LESSER**

Documentation of Class 2 materials transported offsite shall be performed in accordance with the Excavated Materials Management Plan.

#### **1.11 HAZARDOUS WASTE MANIFESTING PROCEDURES FOR CLASS 1 MATERIAL**

- A. The Contractor shall furnish all labor, materials, equipment, and incidentals required to transport those materials identified as hazardous waste for the purpose of disposal.
- B. The Contractor shall comply with all hazardous waste manifesting procedures included in the Disposal Plan, all applicable regulatory requirements listed as well as other applicable federal, state, or local laws, codes and ordinances, which govern or regulate transportation of wastes (including but not limited to Department of Transportation [DOT], DOT –HM 181 as per 49 CFR 172).

#### **1.12 MEASUREMENT AND PAYMENT**

Full compensation for doing all work necessary to comply with this Section and Article 15.09, including preparation of the Site Health and Safety Plan, Asbestos Dust Mitigation Plan, and Excavated Materials Management Plan, shall be included in the Lump Sum price bid for NATURALLY OCCURRING ASBESTOS (NOA) MITIGATION PLANS, Bid Item No. 5.

### **PART 2 – NOT USED**

### **PART 3 – EXECUTION**

#### **3.01 TEMPORARY STOCKPILING OF EXISTING AND IMPORTED SOIL**

- A. When rain is forecast within 72-hours, hay bales and/or silt traps must surround the stockpile to minimize sediment runoff.
- B. After a stockpile has been removed from a completed surface, the Contractor shall wet sweep and vacuum the area, street, and sidewalk to remove any residual dirt.
- C. Contractor shall not mix stockpiles of imported soil with existing soil when otherwise approved by the Engineer.
- D. The Engineer retains the right to suspend the use of temporary stockpiling on-site (within the project limits), in the event of negative public perception, aesthetic concerns, and regulatory concerns. In such an event, the Contractor may be required to remove the stockpile within 24 hours.

### **END OF SECTION**

**SECTION 02221**  
**TREE PROTECTION**

**PART 1—GENERAL**

**1.01 SUMMARY**

Provide protection of existing trees as necessary to comply with items specified herein.

**1.02 RELATED SECTIONS**

- A. Section 02170 – ENVIRONMENTAL MANAGEMENT OF EXCAVATED MATERIALS
- B. Section 02230 – DEMOLITION, SITE CLEARING AND MOBILIZATION
- C. Section 02315 – EXCAVATING, BACKFILLING, COMPACTING AND GRADING
- D. Section 02900 – LANDSCAPE PLANTING
- E. Section 02810 – IRRIGATION SYSTEM

**1.03 QUALITY ASSURANCE**

- A. Use adequate numbers of skilled workmen who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for proper performance of the work of this Section.
- B. Use equipment adequate in size, capacity, and numbers to accomplish the work in a timely manner.

**1.04 MEASUREMENT AND PAYMENT**

Separate measurement or payment will not be made for work required under this Section. All costs in connection therewith will be considered incidental to the item of work to which it pertains.

**PART 2—PRODUCTS**

**2.01 OTHER MATERIALS**

Provide submittal to the Engineer for all other materials, not specifically described but required for a complete and proper installation, as selected by the Contractor subject to the approval of the Engineer.

**PART 3—EXECUTION**

**3.01 SURFACE CONDITIONS**

Examine the areas and conditions under which work of this Section will be performed. Correct conditions detrimental to timely and proper completion of the Work. Do not proceed until unsatisfactory conditions are corrected.

### 3.02 FINISH ELEVATIONS AND LINES

Comply with pertinent provisions of these specifications and drawings.

### 3.03 TREE PROTECTION DURING DEMOLITION AND SITE CLEARING

The following work must be accomplished before any demolition site clearing or trenching activity occurs within 50 feet of trees or some protected area designated by other means, such as a site map or aerial photo.

- A. The Contractor is required to meet the Engineer at the site prior to beginning work to review all work procedures and tree preservation measures.
- B. The limits of the Critical Root Zone (CRZ) for each tree shall be staked in the field. The CRZ is to be no less than one foot per inch of trunk DBH.
- C. Any brush clearing required within the critical root zone shall be accomplished with hand operated equipment.
- D. All downed brush shall be removed from the CRZ either by hand or with equipment sitting outside the CRZ. Extraction shall occur by lifting the material out, not by skidding it across the ground.
- E. Structures and underground features to be removed from the CRZ shall use the smallest equipment possible and operate from outside the CRZ. The Engineer shall be on-site during all operations within the CRZ to monitor demolition activity.
- F. A 4-foot plastic link fence with posts sunk into the ground shall be erected to enclose the CRZ for each "keeper" tree or cluster of "keeper" trees.
- G. Any damage to trees due to demolition activities shall be reported to the Engineer within 4 hours so that remedial action can be taken. Timeliness is critical to tree health.

### 3.04 TREE PROTECTION DURING CONSTRUCTION

- A. Before beginning work, the Contractor is required to meet with the Engineer on-site to review all work procedures and tree protection measures.
- B. Contractor shall provide submittal to Engineer for approval, for the types of tree fences to be erected to protect trees that are to be preserved. Fences define a specific protection area for each tree or group of trees. Fences are to remain until all site work has been completed. Fences may not be relocated or removed without written permission from the Engineer.
- C. Construction trailers, traffic and storage areas must remain outside fenced area at all times.



- D. All underground utilities and drain or irrigation lines shall be routed outside the CRZ. If lines must traverse the protected areas, they shall be tunneled or bored under the tree.
- E. No materials, equipment, spoil, waste or washout water may be deposited, stored or parked within the CRZ.
- F. Additional root pruning required for clearance during construction must be performed under the direction of the Engineer.
- G. Any herbicide placed under paving materials must be safe to use around trees and labeled for that use. Any pesticides used on-site must be tree-safe and not easily transported by water.
- H. If any injury should occur to any tree during construction, it should be evaluated as soon as possible by the Engineer so that appropriate treatments can be applied.
- I. Any grading, construction, demolition, or other work that is expected to encounter tree roots at areas designated on the drawings as existing tree to remain and provide protection during construction shall be reported to the Engineer. (Note: Specific locations or tree tag numbers should be identified).
- J. Each irrigation shall wet the soil within the CRZ to a depth of 30 inches.
- K. Erosion control devices such as silt fencing, debris basins and water diversion structures shall be installed to prevent siltation and/or erosion within CRZ.
- L. Any roots damaged during grading or construction shall be exposed to sound tissue and cut cleanly with a saw or lopper.
- M. Spoil from trenches or other excavations shall be removed from the CRZ.
- N. No burn piles or debris pits shall be placed within the CRZ. No ashes, debris or garbage may be dumped or buried within the CRZ.
- O. Maintain fire-safe around fenced areas. Also, no heat sources, flames, ignition sources, or smoking is allowed near mulch or tree.

**END OF SECTION**

## **SECTION 02230**

### **DEMOLITION, SITE CLEARING, and MOBILIZATION**

#### **PART 1 – GENERAL**

##### **1.01 SUMMARY**

Demolition includes, but is not limited to:

- A. Removal of vegetation, grass, grass roots, shrubs, tree stumps, trees, upturned stumps, weed growth, tree roots, brush, masonry, concrete, rubbish, debris and other objectionable materials, within limits of the Work.
- B. Removal of concrete and bituminous surfaces, as shown on Drawings.
- C. Demolition or removal of the existing guard house – upon approval of the Engineer, when new guard house is completed and satisfactorily functioning.
- D. Demolition or removal of the existing gate and the existing gate operator - upon approval of the Engineer.
- E. Demolition of existing sections of chain link fence as shown on the drawings and installation of replacement sections as shown on the drawings.
- F. Mobilization shall consist of all preparatory work and materials necessary for installation and maintenance operations, including, but not limited to, those necessary for the movement of personnel, equipment, supplies, office facilities and all appurtenances for the Contractor, and the Engineer if required, signs and incidentals to the project site; for the establishment of all other facilities necessary for the work on the project; for all necessary work to provide pollution control, except preparation and monitoring of the SWPPP; and for all other work and operations which must be performed or costs incurred prior to beginning work on the various Contract items on the project site.
- G. Portable toilets shall be provided and placed as directed by the Engineer.

##### **1.02 RELATED SECTIONS**

- A. Section 02170 – ENVIRONMENTAL MANAGEMENT OF EXCAVATED MATERIALS
- B. Section 02315 – EXCAVATING, BACKFILLING, COMPACTING AND GRADING
- C. Section 02740 – ASPHALT CONCRETE PAVING
- D. Section 02900 – LANDSCAPE PLANTING
- E. Section 13126 – PREFABRICATED GUARD HOUSE

### 1.03 SUBMITTALS

Submittals according to the Conditions of the Contract and these Specifications, to include:

- A. Shop Drawings: Submit site plan indicating extent of site clearing.
- B. Documentation of current certification as an 'arborist' from the International Society of Arboriculture (ISA) or 'consulting arborist' from the American Society of consulting Arborists (ASCA) for the proposed on-site arborist.
- C. Documentation of current certification as a 'tree worker' from the ISA for personnel doing any pruning.

### 1.04 PROJECT CONDITIONS

- A. All design and plans are based on the existing topographic survey and existing utility information received from the Engineer. The Contractor shall verify the accuracy of existing topography and other site conditions prior to construction. The contractor shall notify and obtain written approval from the Engineer of any discrepancies or revisions that is required as a result of such field investigation prior to commencement of work.
- B. Commencement of work by the Contractor constitutes prima facie evidence of acceptance and knowledge of existing conditions.
- C. Contractor shall maintain utility services for all of the Plant facilities that are to remain operational at all times. Coordinate all down time with Engineer and submit phasing drawings for Engineer's approval prior to any demolition.

### 1.05 QUALITY ASSURANCE

Comply with City of San Jose Standard Specifications for Public Works Construction, current edition, as a minimum requirement.

### 1.06 MEASUREMENT AND PAYMENT

- A. Full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all work required for mobilization, shall be included in the lump sum price bid for MOBILIZATION, Bid item No. 2.
- B. Full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all work required for demolition, clearing and grubbing, shall be included in the lump sum price bid for DEMOLITION, CLEARING & GRUBBING, Bid Item No. 3.

### **PART 2 – NOT USED**

### **PART 3 – EXECUTION**

### 3.01 SITE PREPARATION

- A. Traffic: Conduct demolition and site-clearing operations to ensure minimum interference with adjacent occupied or used facilities. The Contractor shall not close or obstruct Plant Roads or other occupied or used facilities without the written approval of the Engineer.
- B. Protection of existing improvements on adjoining buildings and facilities.
  - 1. Protect improvements on adjoining buildings and facilities.
  - 2. Restore damaged improvements to their original condition, as acceptable to the Engineer, at Contractor's expense.
- C. In all Planting areas, the Contractor shall remove all rocks that are greater than 1 inch in any dimension. This may be done in coordination with the soil preparation operations as specified in Section 02900.

### 3.02 DEMOLITION

- A. Unless items are otherwise indicated to be reinstalled, remove and dispose of items indicated. Do not store on-site of the removed items.
- B. Remove items indicated; clean, service and otherwise prepare for service; reinstall in the location indicated.

### 3.03 DISPOSAL

- A. Promptly dispose of materials resulting from demolition operations. Do not allow materials to accumulate on site.
- B. Remove rubbish, debris and waste materials and legally dispose of off the Project site. Transport materials resulting from demolition operations and legally dispose of off site.

### 3.04 TREE AND STUMP REMOVAL

- A. Remove trees and stumps indicated and/or required to be removed. Remove trees, together with bulk of roots, to a minimum depth of 4 feet below required grade, and within a radius of approximately 7 feet beyond perimeter of trunk at grade.
- B. Fill and compact excavation from tree and stump removal. Fill in 6 inch layers, each compacted to 90 percent of maximum density in accordance with ASTM D 1557.
- C. Backfilling shall not commence until the excavation is inspected and tested.

### 3.05 CONCRETE AND BITUMINOUS SURFACING REMOVAL

Break up and completely remove existing concrete surfacing, curbs, gutters, walks and bituminous surfacing to the indicated limits. Cutting shall be performed to a neat

DEMOLITION, SITE CLEARING and MOBILIZATION

and even line with proper tools or a concrete cutting saw. Minimum depth of cut shall be 1-1/2 inches, unless otherwise indicated. Remove concrete broken beyond the indicated limits to the nearest joint or score line and replace with new concrete to match existing.

### 3.06 FENCING

- A. Existing fences scheduled to remain may be removed to facilitate the Work, provided they are re-installed to their original condition, in accordance with the requirements of Section 02825: Ornamental Steel Fence System, Industrial.
- B. Fencing indicated to be removed and not reinstalled shall be completely removed, including footings. Fill and compact excavations.

### 3.07 BURNING

No burning of material will be allowed. Combustible material must be disposed of a site designated in the special provisions, or at the local public dump.

**END OF SECTION**

## **SECTION 02315**

### **EXCAVATING, BACKFILLING, COMPACTING and GRADING**

#### **PART 1 – GENERAL**

##### **1.01 SUMMARY**

Section Includes:

- A. Excavating, filling, backfilling, and compacting for Project site pavement, planting areas, buildings, and other structures.
- B. Trenches for utility lines such as water, gas, irrigation, storm drain and sewer lines, concrete-encased conduits, manholes, vaults, valve boxes, catch basins, thrust blocks, yard boxes, pull boxes, and other utility appurtenances.

##### **1.02 RELATED SECTIONS**

- A. Section 02170 – ENVIRONMENTAL MANAGEMENT OF EXCAVATED MATERIALS
- B. Section 02230 – DEMOLITION, SITE CLEARING AND MOBILIZATION
- C. Section 02740 – ASPHALT CONCRETE PAVING
- D. Section 02810 – IRRIGATION SYSTEM
- E. Section 02900 – LANDSCAPE PLANTING
- F. Division 16 – ELECTRICAL

##### **1.03 SYSTEM DESCRIPTION**

Import and Export of Earth Materials:

- A. Fees: Pay as required by these Specifications.
- B. Bonds: As required by conditions of Contract and of these Specifications.
- C. Haul Routes and Restrictions: Comply with the requirements of the City of San Jose.

##### **1.04 SUBMITTALS**

Imported Soils: The Engineer shall obtain initial product Sample for testing in accordance with the terms of Article 3.06 of this section.

##### **1.05 PROJECT CONDITIONS**

Information on Drawings or in soil investigation report does not constitute a guarantee of accuracy or uniformity of soil conditions over the Project site.  
A copy of the foundation investigation and soils report is available for examination at the Engineer's office during regular office hours.

#### 1.06 MEASUREMENT AND PAYMENT

Separate measurement or payment will not be made for work required under this Section. All costs in connection therewith will be considered incidental to the item of work to which it pertains.

### PART 2 – PRODUCTS

#### 2.01 FILL AND BACKFILL MATERIALS

- A. Fill and backfill material shall be a granular material previously removed from excavation or imported fill material, free of clods and stones larger than 3 inches, (2½ inches for utility trenches) foreign materials, vegetable growths, sod, expansive soils, rubbish and debris, brick rubble and broken concrete. Material shall conform to these specified requirements and related sections.
- B. Fill material exhibiting a wide variation in consistency and/or moisture content shall be blended and/or aerated to stabilize and upgrade the material.
- C. Bedding material from trench bottom to one foot above the pipe:
  - 1. Sand, gravel, crushed aggregate or native free-draining granular material providing a sand equivalent of at least 30 or a coefficient of permeability greater than 1.4 inches per hour.
  - 2. Sand complying with the Specifications for cement concrete aggregates.
- D. Permeable Backfill:

Provide permeable backfill material behind retaining structures consisting of gravel, crushed gravel, crushed rock, natural sands, manufactured sand, or combinations of these materials conforming to the following gradations:

| <u>Sieve Size:</u> | <u>Percentage Passing:</u> |
|--------------------|----------------------------|
| 3/4 inch (19mm)    | 100                        |
| 3/8 inch (10mm)    | 80-100                     |
| No. 100            | 0-8                        |
| No. 200            | 0-3                        |

- 1. Those portions of fill material passing a No. 4 sieve shall provide a sand equivalent of at least 60.
- 2. Provided backing for weep-holes shall consist of 2 cu. ft. of aggregate in burlap sacks, securely tied. Aggregate shall conform to requirements for No. 3 concrete aggregate as specified in subsection 200-1.4 of the Standard Specifications for Public Works Construction.

3. Permeable Backfill Alternate Materials: Instead of the materials specified for retaining structures backfill, a drainage matting system such as Miradrain by Mirafi, Inc., or approved equal, may be provided if reviewed by the Engineer.
4. Cement-sand slurry shall be provided with 1 sack of cement per cubic yard of the mixture.

## 2.02 BASE MATERIALS

- A. Concrete Slabs on Grade: Provide Class 2 "Crushed Aggregate Base" as specified in Caltrans Standard Specifications, Section 26 – Aggregate Bases, with 3/4 inch maximum size aggregates. Provide 3 inch thick base, unless noted otherwise.

Aggregate for Class 2 aggregate base shall be free from organic matter and other deleterious substances, and shall be of such nature that it can be compacted readily under watering and rolling to form a firm, stable base. Aggregate may include material processed from reclaimed asphalt concrete, portland cement concrete, lean concrete base, cement treated base or a combination of any of these materials. The amount of reclaimed material shall not exceed 50 percent of the total volume of the aggregate used.

- B. Provide bituminous surfacing as indicated on Drawings.

## PART 3 – EXECUTION

### 3.01 GENERAL

- A. Before excavation, contact USA North of Central/Northern California and Nevada, at [www.usanorth.org](http://www.usanorth.org) or 1-800 227-2600 for information on buried utilities and pipelines.
- B. Remove concrete or bituminous pavement to straight lines by saw cutting.

### 3.02 PROTECTION

- A. Protect and guard excavations against danger to life, limb, and property as required by, but not limited to, OSHA regulations.
- B. Protect existing improvements including landscaping against damage. Repair or replace damaged items.
- C. Protect existing utility services and distribution systems from damage or displacement.
- D. Shore, crib, or lag excavations and earthen banks as necessary to prevent cave in, erosion or gulying of sides.



- E. Provide excavations free from standing water by pumping, draining, or providing protection against water intrusion. If soil becomes soft, soggy, or saturated, excavate to firm undisturbed earth and fill as required. Slope adjacent grades away from excavations to minimize entry of water.

### 3.04 EXCAVATION

- A. Unclassified Excavations: Comply with the City of San Jose Standard Specifications for Public Works Construction, Section 300: "Earthwork," except as modified herein.
- B. Form sides of footings, pads, grade beams, and slab foundations, unless otherwise indicated. Provide excavations of sufficient size to permit installation and removal of forms and other required Work.
- C. Machine-drill excavation for tree holes to size and depth indicated. Hand dig in areas indicated by the Engineer.
- D. Provide excavation bottoms level and free from loose material. Excavate to indicated or required elevations of undisturbed earth.
- E. Barricade trenches, ditches, pits, sumps, and similar Work outside the barricaded working area with chain link fence as specified in these Specifications and in accord with Cal/OSHA standards and requirements.
- F. Trenches over 5 feet in depth shall comply with the Construction Safety Orders of the California Division of Industrial Safety.
- G. Where indicated and/or required to excavate in lawn areas, protect adjoining lawn areas outside of the Work area. Replace or install removed sod upon completion of backfill by installing sod level with adjacent lawns. If installation of removed sod fails, furnish sod and install to match existing lawns.
- H. For Structures:
  - 1. Calculate excavation quantities based on elevations or depths indicated on Drawings.
  - 2. Provide 2000 psi concrete for backfill of over-excavated areas to indicated or required elevations.
  - 3. Special preparation of B.E.P. areas: Excavate areas designated on Drawings as bottom of excavated planes (B.E.P.), by excavating and filling to indicated grades and elevations.
- I. For Utilities:
  - 1. Excavate trenches to required depth for utility lines, such as pipes, and conduits, with minimum allowance of 6 inches at the bottom and 6 inches at the sides for bedding or concrete encasement as indicated on Drawings. Grade bottom of trenches to a uniform smooth surface.

Remove loose soil from the excavation before placing sand bedding or concrete encasement.

2. Do not install piping lengthwise under concrete walks without review by the Engineer.
3. Do not excavate trenches parallel to footings closer than 18 inches from the face of the footing or below a plane having a downward slope of two horizontal to one vertical, from a line 9 inches above bottom of footings.

- a. Unless otherwise indicated on Drawings, depth of excavations outside buildings shall provide for a minimum coverage above top of piping, tank or conduit measured from the lowest adjoining finished grade, as follows:

|                                    |  |
|------------------------------------|--|
| Steel Pipe                         | 24 inches below finished grade   |
| Copper Water Tube                  | 18 inches below finished grade   |
| Cast-Iron, Pressure Pipe           | 36 inches below finished grade   |
| Plastic Pipe (other than waste)    | 30 inches below finished grade   |
| Soil, sewer & storm drain          | minimum 18 inches below finished grade, and as required for proper pitch and traffic load. Install polypropylene sewer pipe with at least 24 inches of coverage. |
| Irrigation Pipe: Non-pressure pipe | 12 inches  |
| Pressure pipe                      | 24 inches.   |

- b. Trench width shall provide space for fitting and joining. Excavate for piping bells and fittings, bell and spigot pipe and other fittings.
4. Where portions of existing structures, walks, paving, or other improvements are removed or cut for piping or conduit installation, replace the material with equal quality, finished to match adjoining existing improvements. Repair pavement as specified in Section 02740.
5. Provide a minimum clear dimension of 2 inches from sides of wall excavation to outer surfaces of buried pipes or conduits placed in the same trench or outside surfaces of containers and/or tanks.

### 3.05 FINISH GRADING

- A. Finish grading in preparation for placing of paving, liners, footings, landscaping and appurtenances shall be performed at all places that are indicated on the

#### EXCAVATING, BACKFILLING, COMPACTING & GRADING

Drawings, to the lines, grades, and evaluations shown and otherwise as acceptable to the Engineer. During the process of grading, the subgrade shall be maintained in a well drained condition.

- B. If at the time of grading it is not possible to place any material in its proper section of the permanent embankment, fill, or excavation, such material shall be stockpiled for later use in areas acceptable to the Engineer. No extra payment will be made for the stockpiling or double handling of excavated material.
- C. Stones or rock fragments larger than 1 inch in their greatest dimensions will not be permitted in the top 6 inches of the finished subgrade of fills or embankments.

### 3.06 IMPORT / EXPORT OF MATERIALS

- A. Unclassified Fill and Compaction: Comply with the City of San Jose Standard Specifications for Public Works Construction, Section 02300 - Earthwork, except as modified herein. Install and compact fill in layers not to exceed 6 inches in thickness.
- B. Provide fill materials as specified in Part 2- Products. Excavated materials from the Project site are not sufficient, import additional materials as necessary. Top 6 inches of soil must be clean material.
- C. In addition to the requirements of this section, import and/or exported materials shall comply with the requirements Section 10, of these Specifications.
- D. Imported fill materials will be sampled the Contractor, for compliance with the requirements of Part 2 of this section.
- E. Initial sampling and testing shall be performed before importing material to the Project site. Identify the location of the source site in addition to the address, name of the person and/or entity responsible for the source site. The Contractor will obtain both the initial and additional samples from the identified site for required testing.
- F. If the total quantity of import is determined to be greater than 1000 cubic yards of material, one sample will be obtained and submitted for testing for each 250 cubic yards of imported material. If the total quantity of import is determined to be less than 1000 cubic yards, one sample will be obtained and submitted for testing for each 100 cubic yards of imported material.
- G. The independent approved testing laboratory will perform the required tests and report results of all tests noting if the tested material passed or failed such tests and shall furnish copies to the Engineer, Contractor, and others as required. Report will state tests were conducted under the responsible charge of a licensed State of California professional registered engineer and the material was tested in accordance with applicable provisions of the Contract Documents, Title 24, and CCR upon completion of the Work of this section, the independent testing laboratory and geotechnical engineer as required by Title 24, and the CCR.

- H. Bills of lading or equivalent documentation will be submitted to the Engineer.
- I. Upon completion of import operations, provide the Engineer a certification statement attesting that all imported material has been obtained from the identified source site.

### 3.07 INSTALLATION OF MATERIALS

- A. Pavement: Fill or backfill materials shall be installed in horizontal layers of 6 inches, unless otherwise required. Each layer shall be evenly placed and moistened or aerated as necessary. Unless otherwise reviewed by the Engineer, each layer of fill material shall cover the length and width of the area to be filled before the next layer of material is installed. Top surface of each layer shall be installed to an approximate level with a crown or crossfall of at least 1 in 50, but not more than 1 in 20. Provide adequate drainage at all times during installation of the Work of this section.
- B. Structures:
  - 1. After concrete has been placed, forms removed, and concrete Work inspected, backfill excavations with earth to indicated or required grades. Backfill simultaneously on each side of walls or grade beams. Remove rubbish, debris and other waste materials from excavations before placing backfill.
  - 2. Before placing any backfill, adequately cure concrete and provide bracing, if required to stabilize structure. Protect waterproofing or damp-proofing against damage during backfilling operations with the required protection board. Remove bracing as backfill operation progresses.
  - 3. Do not furnish or install expansive soils for retaining wall backfill.
  - 4. Rigidly control the amount of water to be installed to provide optimum moisture content for type of fill material furnished. Do not over-saturate or compact by flooding or jetting.
  - 5. Install wall backfill before installing railings and fences on walls.
  - 6. Install weep hole drainage at the backside of retaining walls so the backing completely covers the weep holes, is horizontally centered and extends at least 12 inches above the bottom of the weep opening. Provide an 8 inch square section of 1/4 inch galvanized or aluminum screen, with a minimum wire diameter of 0.03 inch, and install at the backside of each weep hole before installing the backfill material.
  - 7. Where a reviewed drainage matting system is provided instead of permeable backfill for retaining structures, install in accordance with the manufacturer recommendations.
- C. Utilities:

1. Do not install backfill until the work of this section has been inspected and approved by the Engineer. Do not furnish or install materials excavated from the Project site containing unsuitable materials for backfill.
2. Backfill electrical or other excavated utility trenches located outside of barricaded installation areas within 24 hours after inspection by the IOR.
3. Install backfill in layers not exceeding 4 inches in thickness, except cement-sand slurry.
4. If materials excavated from the Project site are not permitted for trench backfill in paved areas, backfill trenches with a cement-sand slurry mix. Install backfill to an elevation of the existing undisturbed grades plus one inch.

### 3.08 COMPACTING

- A. Each layer of fill material shall be compacted by tamping, sheepfoot rollers, or pneumatic-tired rollers to provide specified relative compaction. At inaccessible locations, provide specified compaction by manually held, operated and directed compaction equipment.
- B. Install and compact sand bedding to provide a uniform bearing under the full length of piping and conduits.
- C. Unless otherwise indicated, compact each layer of fill material to a relative compaction of at least 90 percent.
- D. When fill materials, or a combination of fill materials, are encountered or provided which develop densely packed surfaces as a result of installation or compacting operations, scarify each layer of compacted fill before installing the next succeeding layer.

### 3.09 INSPECTION AND TESTING

- A. Engineer will inspect excavations, sample material quality for testing as required in Part 2, and observe installation/compaction of fill materials.
- B. Engineer will sample imported fill materials from their designated source and submit all samples to the independent approved testing laboratory before delivery to the Project site.
- C. Installation of backfill will be observed by the Engineer.
- D. Engineer will inspect and test excavation Work before the installation of fill and/or other materials.
- E. Compaction: Test compaction in accordance with ASTM D 1557, Method C.
- F. Engineer will inspect foundation excavations when completed and ready for forms, after forms are in place, and before first placement of concrete.

### 3.10 PROTECTION

Protect the Work of this section until Substantial Completion.

### 3.11 CLEANING

Remove rubbish, debris, and waste materials and legally dispose of off the Project site.

**END OF SECTION**

## **SECTION 02740**

### **ASPHALT CONCRETE PAVING**

#### **PART 1 – GENERAL**

##### **1.01 SUMMARY**

This work includes furnishing and installing asphalt concrete pavement with Class II aggregate base per plan and specification.

##### **1.02 RELATED SECTIONS**

- A. Department of Transportation, Caltrans Standard Specifications (CSS) – 2002
- B. Section 02230 – DEMOLITION, SITE CLEARING AND MOBILIZATION
- C. Section 02315 – EXCAVATING, BACKFILLING, COMPACTING AND GRADING
- D. Section 02810 – IRRIGATION SYSTEM

##### **1.03 SUBMITTALS**

Submittals according to the Conditions of the Contract and of these Specifications, to include:

- A. Submit copies of materials lists identifying types and sources of materials proposed for this work.
- B. Material Certifications shall be signed by material producer and Contractor, certifying that each material item complies with or exceeds specified requirements.
- C. Shop Drawings.

##### **1.04 QUALITY CONTROL**

- A. Qualification of Asphalt Concrete Producer:

Use only materials which are furnished by a bulk asphalt concrete producer regularly engaged in production of hot-mix, hot-laid asphalt concrete.

- B. Qualification of Testing Agency:

Testing and Inspection: Contractor shall provide material testing and inspection for quality control during paving operations. If re-testing is required due to failure caused by the Contractor, then the costs will be paid for by the Contractor.

- C. Paving Quality Requirements:

In addition to either specified conditions, comply with the following minimum requirements:

1. Testing in-place asphalt concrete courses for compliance with the requirements for density thickness and surface smoothness.
2. Provide final surfaces of uniform texture conforming to required grades and cross-sections.
3. Compare density of in-place material against laboratory specimen of same asphalt concrete mixture, when subjected to 50 blows of standard Marshall hammer on each side of specimen.

#### 1.05 SITE CONDITIONS

- A. Weather Limitations: Apply prime and tack coats when ambient temperature is above 50 degrees F and when temperature has not been below 35 degrees F for 12 hours immediately prior to application. Do not apply when base is wet or contains an excess of moisture.
- B. Construct hot-mixed asphalt surface course when atmospheric temperature is above 40 degrees F and when base is dry. Base course may be placed when air temperature is above 30 degrees F and rising.

#### 1.06 MEASUREMENT AND PAYMENT

Separate measurement or payment will not be made for work required under this Section. All costs in connection therewith will be considered incidental to the item of work to which it pertains.

### **PART 2 – PRODUCTS**

#### 2.01 MATERIALS

- A. General: Use locally available materials and gradations that exhibit a satisfactory record of previous installations.
- B. Aggregate Base:  $\frac{3}{4}$  inch maximum aggregate size. CSS Section 26-1.02A.
- C. Asphalt: Asphalt shall be AR-4000 five percent (5%) to seven percent (7%) 85/100 penetration asphalt, mineral aggregate.
- D. Asphalt Aggregate:  $\frac{1}{2}$  inch maximum aggregate size.
- E. Prime Coat: Liquid asphalt, Type SC-70.
- F. Paint Binder (Tack Coat): Emulsified asphalt, Type SS-1.



## **PART 3 – EXECUTION**

### **3.01 PLACING AGGREGATE BASE**

- A. Construct aggregate base with minimum compacted thickness as specified on plans.
- B. Compaction to be 95 percent.
- C. Grading Tolerance: 0.05 foot  $\pm$  above or below proper grade, and such surface shall contain no ridges, valleys or sharp breaks.

### **3.02 PLACING ASPHALTIC CONCRETE**

- A. Remove loose material from compacted base course immediately before applying prime coat.
- B. Prime Coat: Apply at rate of 0.20 to 0.50 gallon per square yard, over compacted base course at a temperature from 105 degrees F to 175 degrees F. Apply material to penetrate and seal, but not flood surface. Cure and dry as long as necessary to attain penetration and evaporation of volatile material. Additional asphalt shall be applied to any spots where color or other signs indicate that more asphalt is required to prevent breaking or raveling.
- C. Tack Coat: Apply at a rate of 0.10 gallon per square yard of surface covered. Apply to all vertical surfaces of existing building, concrete structures and construction joints in the surfacing against which asphalt concrete is to be placed.
- D. Exercise care in applying bituminous materials to avoid smearing of adjoining concrete surfaces. Remove and clean damaged surfaces.
- E. Place hot-mixed asphalt mixture on prepared surface, spread and strike off.
- F. Construct asphalt concrete with minimum compacted thickness as specified on plans.
- G. Joints: Make joints between successive work days, to ensure continuous bond between adjoining works. Construct joints to achieve the same texture, density and smoothness as other sections of hot-mixed asphalt course. Clean contact surfaces and apply tack coat.

### **3.03 FIELD QUALITY CONTROL**

- A. Contractor shall obtain an independent testing laboratory to test in-place hot-mixed asphalt courses in compliance with requirements for thickness and surface smoothness. Repair or remove and replace unacceptable paving as directed by the Engineer.

- B. In-place compacted thickness tested in accordance with ASTM D3549, and will not be acceptable if exceeding the surface course of plus or minus  $\frac{1}{4}$  inch.
- C. Test finished surface of each hot-mixed asphalt course for smoothness, using 10 foot straightedge applied parallel with and at right angles to centerline of paved area. Surfaces will not be acceptable if exceeding  $\frac{3}{16}$  inch tolerances for smoothness.
- D. Check surface areas at intervals as directed by the Engineer.

**END OF SECTION**

## **SECTION 02753**

### **CONCRETE FINISHES**

#### **PART 1 – GENERAL**

##### **1.01 DESCRIPTION**

This section includes all exterior Portland Cement Concrete paving, curing and finishes as indicated and specified herein.

##### **1.02 RELATED SECTIONS**

- A. Section 03310 – CAST-IN-PLACE CONCRETE
- B. Division 3 – CONCRETE
- C. Section 04820 – REINFORCED UNIT MASONRY SYSTEM

##### **1.03 QUALITY ASSURANCE**

- A. Refer to Section 03310: Cast-In-Place Concrete for portland cement concrete requirements.
- B. Concrete finishes shall be performed by the Contractor who has a minimum of five years experience.
- C. An independent materials testing laboratory will be provided by the District. Tests shall include slump test and concrete compressive strength tests.

##### **1.04 SUBMITTALS**

Submit according to the Conditions of the Contract and these specifications, including: Test data and documentation on cementitious material, aggregates and concrete mixtures.

##### **1.05 COORDINATION / SCHEDULING**

Concrete Surfaces to Receive Other Finishes: Coordinate with other applicable Sections to assure concrete finish is suitable to receive specified finish.

##### **1.06 MEASUREMENT AND PAYMENT**

Separate measurement or payment will not be made for work required under this Section. All costs in connection therewith will be considered incidental to the item of work to which it pertains.

#### **PART 2 – PRODUCTS**

##### **2.01 MATERIALS**

- A. Expansion Joint:

Premolded, bituminous material, nonextruding, conforming to ASTM D 944; thickness as shown on the drawings, black color as manufactured by S.R. Meadows, Inc., National Joint Co., Celotex Corporation, or approved equal.

B. Curing Materials:

1. Absorptive Cover: AASHTO M 182, Class 2, burlap cloth made from jute or kenaf, weighing approximately 9 oz./sq. yd. dry.
2. Moisture-Retaining Cover: ASTM C 171, polyethylene film or white burlap-polyethylene sheet.
3. Water: Potable.
4. Evaporation Retarder: Waterborne, monomolecular film forming; manufactured for application to fresh concrete. Axim Concrete Technologies; Cimfilm, Burke by Edeco; BurkeFilm, ChemMasters; Spray-Film, or approved equal.
5. Clear Waterborne Membrane-Forming Curing Compound: ASTM C 309, Type 1, Class B. Anti-Hydro International, Inc.; AH Curing Compound #2 DR WB, Burke by Edeco; Aqua Resin Cure, ChemMasters; Safe-Cure Clear, or approved equal.
6. White Waterborne Membrane-Forming Curing Compound: ASTM C 309, Type 2, Class B. Anti-Hydro International, Inc.; AH Curing Compound #2 WP WB, Burke by Edeco; Resin Emulsion White, ChemMasters; Safe-Cure 2000, or approved equal.

### **PART 3 – EXECUTION**

#### **3.01 SLABS**

- A. Finish per ACI 302. Do not sprinkle dry cement or mixture of dry cement and sand directly on surfaces to absorb moisture or to stiffen mix. Make floors and slabs level, wet screeds not permitted.
- B. Float Finish:
1. Do not add water to concrete surfaces during finishing operations.
  2. Begin the second floating operation when bleed-water sheen has disappeared and concrete surface has stiffened sufficiently to permit operations. Float surface with power-driven floats, or by hand floating if area is small or inaccessible to power units. Finish surfaces to true planes. Cut down high spots and fill low spots. Refloat surface immediately to uniform granular texture. Provide finishes as indicated below.
- C. Broom Finish:

1. Initial steel trowel surface as specified for steel trowel finish. After surface has hardened sufficiently, broom lightly with stiff fiber brushes to produce a uniform, even texture. Broom at perpendicular to traffic, unless otherwise indicated.
2. Application: Medium broom finish as indicated on the Drawings.
3. Surface Finish Tolerance: Class AX.

### 3.02 JOINTS AND EDGES

- A. Construct joints as indicated in the Drawings and on approved shop drawings. Joint character shall match that of approved samples. Additional joints as may be required in shop drawings; such joints shall not impair the structure, strength and appearance of the work.
- B. Joints shall be made complete as shown; crossing joints shall physically intersect. If portions of joints cannot be completely executed with use of customary tools, set strips of metal or sealed wood into plastic concrete, and carefully remove after concrete has hardened. Align manually made joints carefully with those portions made by inserts.
- C. Expansion Joints and Edging: Provide expansion joints at the location and intervals as shown on the Drawings, and at all locations where paving abuts buildings, curbs, walls, or other structures.
  1. Clean expansion joints carefully and fill with approved joint compound flush with the paved surface in such a manner as to avoid spilling in paved surfaces or overflow from joint.
- D. Control Joints:
  1. Tooled Joints: Form control joints in fresh concrete by grooving top portion with recommended cutting tool and finishing edges with jointer.
  2. Sawed Joints: Do not provide sawed joints unless approved by the Engineer. When approved, form control joints using powered saws equipped with shatterproof abrasive or diamond-rimmed blades. Cut joints into hardened concrete as soon as surface will not be torn, abraded, or otherwise damaged by cutting action. Complete before shrinkage stresses develop sufficiently to induce cracking.

### 3.03 REPAIRS AND PROTECTION

Conform to Division 3 – Concrete.

**END OF SECTION**

**CONCRETE FINISHES**

02753 - 3

## **SECTION 02810**

### **IRRIGATION SYSTEM**

#### **PART 1 – GENERAL**

##### **1.01 DESCRIPTION**

###### **A. Work Included:**

Order and furnish all labor, materials, supplies, tools and transportation and perform all operations in connection with and reasonably incidental to complete installation of the automatic sprinkler irrigation systems as shown on the drawings. Items hereinafter are included as an aid to take off, and are not necessarily a complete list of work items.

1. Trenching, stockpiling, excavation, backfill materials and refilling trenches.
2. Furnishing materials and installation for complete system including piping, sleeves, backflow prevention assembly, valves, meters, fittings, sprinkler heads, automatic controls and final adjustment of heads to insure complete and uniform coverage.
3. Line voltage connections to the irrigation controllers and low voltage control wiring from controllers to remote control valves.
4. Replacement of unsatisfactory materials.
5. Clean-up, inspection and approval.
6. All work of every description mentioned in the specification and/or addenda thereto, and all other labor, and materials reasonably incidental to the satisfactory completion of the work, including clean-up of the site, as directed by the Engineer.
7. Tests.
8. Record drawings.

###### **B. Work Not Included:**

1. Irrigation water stub-out
2. 120 volt A.C. electrical stub-out to controller location

##### **1.02 RELATED SECTIONS**

- ###### **A. Section 02170 – ENVIRONMENTAL MANAGEMENT OF EXCAVATED MATERIALS**

- B. Section 02315 – EXCAVATING, BACKFILLING, COMPACTING AND GRADING
- C. Section 02740 – ASPHALT CONCRETE PAVING
- D. Section 02900 – LANDSCAPE PLANTING

#### 1.03 GENERAL REQUIREMENTS

A. CAL OSHA Compliance:

All articles and services covered by this specification shall meet or exceed the safety standards established under the Federal Occupational Safety and Health Act of 1970, together with all amendments in effect as of the date of this specification.

B. Comply with all applicable codes and standards:

1. All work and materials shall be in full accordance with the latest rules and regulations of the National Electric Code; the Uniform Plumbing Code, published by Western Plumbing Officials Association; and other State or local laws or regulations. Nothing in these drawings or specifications is to be construed to permit work not conforming to these codes.
2. When the specifications call for materials or construction of a better quality or larger size than required by the above mentioned rules and regulations, the provision of the specifications shall take precedence over the requirements of the said rules and regulations.
3. The Contractor shall furnish, without any extra charge, any additional material and labor when required by the compliance with these rules and regulations, though the work be not mentioned in these particular specifications or shown on the drawings.
4. The Contractor shall erect and maintain barricades, guards, warning signs and lights as necessary or required by OSHA regulations for the protection of the public or workers.
5. Any existing buildings, equipment, piping, pipe covering sewers, sidewalks, landscaping, etc., damaged by the Contractor during the course of this work shall be replaced or repaired by the Contractor in a manner satisfactory to Engineer and at Contractor's expense, and before final payment is made. The Contractor shall be responsible for damage caused by leaks in the piping systems being installed or having been installed by the Contractor. The Contractor shall repair, at Contractor's own expense, all damage so caused, in a manner satisfactory to the Engineer.
6. The Contractor shall pay for all permits, licenses and fees required.

#### 1.04 SUPERVISION AND WORKMANSHIP

The Contractor, personally or through an authorized and competent representative,

shall supervise the work constantly, and shall as far as possible keep the same foreman and workers on the job from commencement to completion. The workmanship of the entire job must in every way be first class, and only experienced and competent workers will be allowed on the job.

#### 1.05 LAYOUT OF WORK

The Contractor shall stake out the irrigation system as shown on the drawings. These areas shall be checked by the Contractor and Engineer before construction is started. Any changes, deletions or additions shall be determined at this check.

#### 1.06 INSTRUCTION

After the system has been installed and approved, the Contractor shall instruct the Engineer in complete operation and maintenance of the irrigation system.

#### 1.07 SUBMITTALS

Submittals according to the Conditions of the Contract and these Specifications, to include:

##### A. Substitutions:

Submit 6 copies of catalogue information on materials which are to be submitted for substitution. No substitution will be permitted without prior written approval by the Engineer. Complete material list shall be submitted prior to performing any work.

##### B. Record Drawings:

1. The Contractor shall maintain in good order in the field office one complete set of black line prints of all sprinkler drawings which form a part of the contract, showing all water lines, sprinklers, valves, controllers and stub-outs. In the event any work is not installed as indicated on the drawings, such work shall be corrected and dimensioned accurately from the building walls.
2. All underground stub-outs for future connections and valves shall be located and dimensioned accurately from building walls on all record drawings.
3. Upon completion of the work, obtain reproducible prints from Engineer and neatly correct the prints to show the as-built conditions.

##### C. Operations and Maintenance Manuals:

1. The Contractor shall submit a record of all irrigation activities and schedule or volume changes on a valve-by-valve basis and shall include an estimate of the total quantity of water applied per month to the entire site, in up-to-date Maintenance Logbooks.



2. The Contractor shall submit written information regarding programming of the irrigation system to the Engineer prior to completion of the Plant Establishment Phase.

#### 1.08 MEASUREMENT AND PAYMENT

- A. Full compensation for furnishing all labor, materials, connections, tools, equipment, and incidentals and for doing all work required for irrigation valves as shown on the Drawings and as specified in these Specifications shall be per each valve, as part of the price bid for IRRIGATION VALVES, Bid Item No. 7.
- B. Full compensation for furnishing all labor, all connectors, sleeves, materials, tools, equipment, and incidentals and for doing all work required for irrigation main lines as shown on the Drawings and as specified in these Specifications and will be measured for payment by the linear foot to the limits indicated on the drawings, and will be paid for at the contract unit price per linear foot for IRRIGATION MAIN LINES, Bid Item No. 8.

Trenching, backfill, grading, compaction and subgrade, drainage aggregate and pipe, and asphalt patching shall be incidental to this bid item.

- C. Full compensation for furnishing all labor, all connectors, materials, tools, equipment, and incidentals and for doing all work required for irrigation lateral lines as shown on the Drawings and as specified in these Specifications and will be measured for payment by the linear foot to the limits indicated on the plans, and will be paid for IRRIGATION LATERAL LINES, Bid Item No. 9.

Trenching, backfill, grading, compaction and subgrade, drainage aggregate and pipe, and asphalt patching shall be incidental to this bid item.

- D. Full compensation for furnishing all labor, materials, transformers, electrical connections, enclosures, tools, equipment, and incidentals and for doing all work required for irrigation controllers as shown on the Drawings and as specified in these Specifications shall be per each valve, as part of the price bid for IRRIGATION CONTROLLER, Bid Item No. 10.
- E. Full compensation for furnishing all labor, materials, tools, equipment, and incidentals and for doing all work required for irrigation bubblers as shown on the Drawings and as specified in these Specifications shall be per each irrigation bubbler, as part of the price bid for IRRIGATION BUBBLERS, Bid Item No. 11.
- F. Full compensation for furnishing all labor, materials, tools, equipment, and incidentals and for doing all work required for irrigation bubblers as shown on the Drawings and as specified in these Specifications shall be per each irrigation sprinkler head as part of the price bid for IRRIGATION SPRINKLER HEADS, Bid Item No. 12.
- G. Full compensation for furnishing all labor, materials, tools, equipment, and incidentals and for doing all work required for water meters as shown on the

Drawings and as specified in these Specifications shall be per each potable water meter, as part of the price bid for 2" WATER METERS, Bid Item No. 14.

- H. Measurement of Irrigation System Operation and Maintenance shall be per month. Full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all work required for irrigating plants both during the installation phase and during the plant establishment phase, repairing, and maintaining the irrigation system shall be included in the unit price bid per month, as part of the price bid for the PLANT ESTABLISHMENT MAINTENANCE, Bid Item No. 24.

## **PART 2 – MATERIALS**

### **2.01 PIPE AND FITTINGS**

- A. Main lines (constant pressure) 2 -1/2" and smaller shall be PVC 1120-Schedule 40 plastic pipe.

Solvent weld main lines: At changes in direction or branch mains, use appropriate Schedule 40 PVC solvent weld fittings as approved by the Uniform Plumbing Code.

- B. Lateral lines (non-pressure): 3/4" and larger shall be 1120-200 PSI PVC plastic pipe. All lateral lines shall be connected with Schedule 40, Type I, Grade I, PVC solvent weld fittings.
- C. Connections between main lines and RCV's shall be of Schedule 80 PVC (threaded both ends) nipples and fittings.
- D. Risers: Schedule 80 PVC threaded nipples and Schedule 80 PVC ells as shown in the construction details. Offset risers shall be Cobra connector Model CC-600 (1/2"x6").

### **2.02 QUICK COUPLING VALVES**

Quick coupling valves shall be as listed on the drawings.

### **2.03 CONTROLLERS**

Controllers shall be as listed on the drawings.

### **2.04 REMOTE CONTROL VALVES**

Remote control valves shall be globe/angle pattern (Rain Bird) with plastic body and bonnet, plastic flow stem and manual bleed petcock. Sizes of remote control valves shall be as listed on the drawings.

### **2.05 GATE VALVES**

A 2-1/2 inch and smaller shall be bronze construction with cross handle and screwed connections. Install in 10" diameter plastic valve box as detailed.

## 2.06 CONTROL WIRE

Control wire shall be copper with U.L. approval for direct burial in ground, size # 14-1. Common ground wire shall have white insulating jacket; control wire shall have insulating jacket of color other than white. Splices shall be made with 3M-DBY seal packs. Provide a separate ground wire for each controller.

## 2.07 BOXES FOR REMOTE CONTROL VALVES

NDS Pro Series Plus Model 1419 plastic valve box with plastic lid. Lid shall be marked: "Irrigation Control Valve." Heat brand the controller and valve number on each lid.

## 2.08 SPRINKLER HEADS

All sprinkler heads shall be as listed on the drawings.

## 2.09 EMITTERS

Emitters shall be as listed on the drawings.

## 2.10 WATER METERS

- A. A 2-inch water meters shall be Multi-Jet flow meters as manufactured by Master Meter, Inc. ([www.mastermeter.com](http://www.mastermeter.com)), or approved equal.

## 2.11 MISCELLANEOUS INSTALLATION MATERIALS

- A. Solvent cement and primer for solvent weld joints shall be of make and type approved by manufacturer(s) of pipe and fittings. Cement shall be maintained at proper consistency throughout use.
- B. Lubricant for assembling rubber ring seal joints shall be of make and type approved by manufacturer of pipe.
- C. Pipe joint compound shall be non-hardening, non-toxic materials designed specifically for use on threaded connections in water carrying pipe. Performance shall be same as Permatex No.51.

## 2.12 MISCELLANEOUS EQUIPMENT

- A. Provide all equipment called for by the Drawings.
- B. Provide to the District, at completion of the Plant Establishment Phase three (3) each of all operating and servicing keys and wrenches required for complete maintenance and operation of all heads and valve. Include all wrenches necessary for complete disassembly of all heads and valves.

# PART 3 – INSTALLATION

## 3.01 PREPARATION

Schedule and coordinate placement of materials and equipment in a manner to effect the earliest completion of work in conformance with construction and

progress schedule.

### 3.02 HANDLING AND STORAGE

- A. Protect work and materials from damage during construction and storage.
- B. Handle plastic pipe carefully; especially protect it from prolonged exposure to sunlight.

### 3.03 LAYOUT

- A. Lay out work as accurately as possible in accordance with diagrammatic drawings.
- B. Where site conditions do not permit location of piping, valves and heads where shown, notify Engineer immediately and determine relocation in joint conference.
- C. Run pipelines and automatic control wiring in common trenches wherever practical.

### 3.04 EXCAVATION AND TRENCHING

- A. Excavation shall be in all cases ample in size to permit the pipes to be laid at the elevations intended and to permit ample space for joining.
- B. Make trenches for pipelines deep enough to provide minimum cover from finish grade as follows:
  - 1. 18" minimum cover over main lines to control valves and quick coupling valves.
  - 2. 18" minimum cover over control wires from controller to valves.
  - 3. 12" minimum cover over RCV controlled lateral lines to sprinkler heads.
- C. Restore surfaces, existing underground installations, etc., damaged or cut as a result of excavations, to original conditions in a manner approved by Engineer.
- D. Where other utilities interfere with irrigation trenching and pipe work, adjust the trench depth as instructed by Engineer.

### 3.05 ASSEMBLING PIPELINES

- A. All pipes shall be assembled free from dirt and pipe scale. Field cut ends shall be reamed only to full pipe diameter with rough edges and burrs removed.
- B. Solvent Weld Joint:

1. Prepare joint by first making sure the pipe end is square, then deburring the pipe end and cleaning pipe and fitting of dirt, dust and moisture.
2. Dry-insert pipe into fitting to check sizing. Pipe should enter fitting 1/3 to 2/3 depth of socket.
3. Coat the inside socket surface of the fitting and the male end of the pipe with P-70 primer (manufactured by Weld-On). Then without delay, apply Weld-On 711 cement liberally to the male end of the pipe and also apply 711 cement lightly to the inside of the socket. At this time, apply a second coat of cement to the pipe end.
4. Insert pipe immediately into fitting and turn 1/4 turn to distribute cement and remove air bubbles. The pipe must seat to the bottom of the socket and fitting. Check alignment of the fitting. Pipe and fitting shall be aligned properly without strain to either.
5. Hold joint still for approximately thirty (30) seconds and then wipe the excess cement from the pipe and fitting.
6. Cure joint a minimum of thirty (30) minutes before handling and at least six (6) hours before allowing water in the pipe.

C. Threaded Joint:

1. Field threading of plastic pipe or fittings is not permitted. Factory-formed threads only will be permitted.
2. Factory made nipples shall be used wherever possible. Field cut threads in metallic pipe will be permitted only where absolutely necessary. When field threading, cut threads accurately on axis with sharp dies.
3. All threaded joints shall be made up with joint compound. Apply compound to male threads only.
4. Where assembling metallic pipe to metallic fitting or valve, not more than three (3) full threads shall show when joint is made up.
5. Where assembling to threaded plastic fitting, take up joint no more than one full turn beyond hand tight.
6. Where assembling soft metal (brass or copper) or plastic pipe, use strap type friction wrench only; do not use metal-jawed wrench.

D. Cap or plug openings as pipeline is assembled to prevent entrance of dirt or obstructions. Remove caps or plugs only when necessary to continue assembly.

E. Where pipes or control wires pass through sleeves, provide removable non-decaying plug at ends of sleeve to prevent entrance of earth.

### 3.06 REMOTE CONTROL VALVES

- A. Install where shown on drawings and group together where practical. Limit one remote control valve per box. No exceptions!
- B. Locate valve boxes 12" from and perpendicular to walk edges, buildings and walls. Provide 12" between valve boxes where valves are grouped together.
- C. Thoroughly flush main line before installing valves.
- D. Install in shrub or groundcover areas where possible.
- E. Label control line wire at each valve with a 2 -1/4" x 2 -3/4" polyurethane I.D. tag, indicating identification number of valve (controller and station number). Attach label to control wire.

### 3.07 AUTOMATIC CONTROL WIRE

- A. Run lines along mains wherever practical. Tie wires in bundles with pipe wrapping tape at 10' intervals and allow slack for contraction between strappings.
- B. Loop a minimum of three (3) feet of extra wire in each valve box; both control wire and ground wire.
- C. Connections shall be made by crimping bare wires with brass connectors and sealing with watertight resin sealer packs.
- D. Splicing will be permitted only on runs exceeding 2,500 feet. Locate all splices at valve locations within valve boxes.
- E. Where control lines pass under paving, they shall pass through Schedule 40 electrical PVC conduit. Do not tape wire in bundles inside conduit. Install electrical pull box at both ends of sleeve.

### 3.08 AUTOMATIC CONTROLLER

- A. Provide and install automatic irrigation controller in approximate locations shown on drawings. The exact location will be determined on the site by the Engineer. Provide conduit and wire and connect to 120 volt switch accessible to controller for ease of maintenance.
- B. Connect control lines to controller in sequential arrangement according to assigned identification number on valve. Each control line wire shall be labeled at controller with a permanent non-fading label indicating station number of valve controlled. Attach label to control wire.

### 3.09 SPRINKLER HEADS AND QUICK COUPLING VALVES (QCV's)

- A. Thoroughly flush lines before installing heads or QCV's.
- B. Locate heads and QCV's as shown on the drawings and details.
- C. Adjust sprinkler heads for proper distribution and trim.

### 3.10 BACKFILLING

- A. Backfill only after piping has been tested, inspected and approved.
- B. Backfill material shall be the earth excavated from the trenches, free from rocks, concrete chunks, and other foreign or coarse materials. Carefully select backfill that is to be placed next to plastic pipe to avoid any sharp objects which may damage the pipe.
- C. All pipe under asphalt paving shall be backfilled with 4" of clean sand on all sides of pipe.
- D. Place backfill materials in 6" layers and compact by jetting or tamping to a minimum compaction of 90 percent of original soil density.
- E. Dress off areas to finish grades and remove excess soil, rocks or debris remaining after backfill is completed.
- F. If settlement occurs along trenches, and adjustments in pipes, valves and sprinkler heads, soil, sod or paving are necessary to bring the system, soil, sod or paving to the proper level or the permanent grade. The Contractor shall make all adjustments without extra cost to the District.

### 3.11 TESTING

Perform test as specified below. Remake any faulty joints with all new materials. Use of cement or caulking to seal leaks is absolutely prohibited.

The Contractor shall:

- A. Notify the Engineer at least three (3) days in advance of testing.
- B. Perform testing at the Contractor's own expense.
- C. Center load piping with small amount of backfill to prevent arching or slipping under pressure. No fitting shall be covered.
- D. Apply the following tests after welded plastic pipe joints have cured at least 24 hours.
  - 1. Test live (constant pressure) and QCV lines hydrostatically at 125 PSI minimum. Lines will be approved if test pressure is maintained for six (6) hours. The lines shall be restored to the original test pressure and the amount of water required to do so shall be measured. Approved tables of allowable loss will be consulted, and the line will be approved or not approved as such results may indicate. The Contractor shall make tests and repairs as necessary until test conditions are met.
  - 2. Test RCV controlled lateral lines with water at line pressure and visually inspect for leaks. Retest after correcting defects.
- E. Check sprinkler coverage to limit overspray, runoff and low head drainage,

correct all problem areas.

### 3.12 GUARANTEE

- A. It shall be the responsibility of the Contractor to fill and repair all depressions and replace all necessary lawn and planting due to the settlement of irrigation trenches for one year following completion and acceptance of the Installation Phase.
- B. The Contractor shall also guarantee all materials, equipment and workmanship furnished by the Contractor to be free of all defects of workmanship and materials, and shall agree to replace at Contractor's expense, at any time within the guaranty period, any and all defective parts that may be found.

### 3.13 IRRIGATION SYSTEM OPERATION AND WARRANTY

#### A. Scope of Work

- 1. Irrigation system operation and maintenance shall consist of all work and materials, excluding water, necessary to irrigate the plants and to repair and maintain the irrigation system in a fully operational condition during the Contract period, including, but not limited to, the Plant Establishment Phase, as shown on the Drawings and as specified in these Specifications. The initial watering of plants during installation shall be included in this item of work.
- 2. Contractor shall employ practices to promote establishment of healthy native plants adapted to natural rainfall, not to produce park-type specimens whose growth rate is artificially enhanced by use of out-of-season irrigation. The plant palette is drought tolerant and it is anticipated that irrigation system operation will occur during the first year, then be significantly reduced in years two and three to promote self sufficiency.

#### B. The Contractor shall utilize water-conserving practices.

Irrigation scheduling shall be directed by the Engineer. The Contractor shall not change the irrigation schedule independently. The Engineer and Contractor shall meet on site when necessary to check and adjust irrigation scheduling. During transition periods (spring into summer, summer into fall) or during extreme heat or dry cold periods, site visits may be called weekly until the new irrigation schedule is set. The Contractor is responsible for observation and timely reporting of irrigation deficiency or excess. Observations of irrigation schedule inadequacy should be relayed to the Engineer within 24 hours and any directions for irrigation remediation from the Engineer shall be carried out within 24 hours. The Contractor shall be on site during irrigation checking.

#### C. Materials



1. The Contractor shall replace or repair within 48 hours of discovery any part of the irrigation system damaged as a result of improper installation or maintenance activities, defective materials, normal wear and tear, vandalism, wildlife, or other acts of nature, except flooding as defined herein.
2. Repairs to the irrigation system shall be in accordance with irrigation specifications.
3. The Contractor shall be on site during plant irrigation to check the irrigation system for proper operation, including, but not limited to, checking the bubblers for leaks and/or blockage. Contractor shall, at no additional cost to the District, reprogram the system and run it at full capacity during any fall or winter drought periods which could endanger the health of the container plantings as determined and directed by the Engineer.

D. Testing

1. The Contractor shall be subject to inspections at any time by the Engineer. The Contractor shall contact the Engineer for direction prior to reprogramming the controller or shutting down the controller at the end of the irrigation season. After the controller has been reprogrammed and at the start of each irrigation season, the Contractor shall demonstrate, at the Engineer's request, the individual run times and days for the irrigation stations.
2. No field testing shall be required for minor repairs to the irrigation system. However, should the controller, main line, or any other significant part or section of the irrigation system require repair, the Contractor shall notify the Engineer within 24 hours of such discovery and shall request an inspection by the Engineer once the repair work is completed. The Contractor shall not resume the irrigation schedule until the Engineer has approved the repair work.
3. The Contractor shall demonstrate the full operation of the irrigation system in the field to the Engineer prior to completion of the Plant Establishment Phase.

3.14 CLEAN-UP

When work of this section has been completed and at such other times as may be directed, remove all trash, debris, surplus materials, and equipment from site.

**END OF SECTION**

## **SECTION 02823**

### **LANDSCAPE METAL SCREEN**

#### **PART 1 – GENERAL**

##### **1.01 DESCRIPTION**

This Section includes furnishing and installing Landscape Metal Screens and trellises as indicated on the drawings.

##### **1.02 SUBMITTALS**

Submittals according to the Conditions of the Contract and of these Specifications, to include:

- A. Submit shop drawings indicating all components and attachments.
- B. Submit samples of Landscape Metal Screens, trim and accessories.
- C. Submit documentation that installers are skilled craft people that have demonstrated a successful history of installing Landscape Metal Screens for at least three years.

##### **1.03 RELATED SECTIONS**

- A. Section 02810 – IRRIGATION SYSTEM
- B. Section 02900 – LANDSCAPE PLANTING
- C. Division 3 – CONCRETE
- D. Section 04820 – REINFORCED UNIT MASONRY SYSTEM
- E. Section 05500 – METAL FABRICATIONS

##### **1.04 QUALITY ASSURANCE**

- A. Provide all components and attachments accessories of Landscape Metal screens by a single manufactures.
- B. All components shall be factory finished. Field painting is not permitted.

##### **1.05 DELIVERY, STORAGE AND HANDLING**

Deliver, store, and handle Landscape Metal Screens to prevent bending and damage.

##### **1.06 WARRANTIES**

All warranties shall be in accordance with these Specifications. Warranties shall commence on date of Notice of Completion.

#### 1.07 MEASUREMENT AND PAYMENT

Included are the three dimensional, welded wire modular trellis panels, structural members, fasteners, clips, anchors, brackets and all other accessories required for installation. This bid item will be measured for payment by the square foot to the limits indicated on the plans, and will be paid for at the contract unit price per square foot, as part of the price bid for LANDSCAPE METAL SCREEN, Bid Item No. 15.

Excavation, backfill, grading, compaction and subgrade, concrete foundation and level preparation, drainage aggregate and pipe, shall be incidental to this bid item.

### PART 2 – PRODUCTS

#### 2.01 MATERIALS

- A. Panels: All panels shall be 14 gauge galvanized steel wire welded to form a 2" x 2" face grid, front and back of panel, separated by bent trusses 3" in depth. All panels shall be factory assembled.
- B. Trim: All 3" x ½" x ½" #5104 Channel Trim and ½" x ½" #5105 Steel Edge Trim shall be 20 gauge galvanized steel sheet welded to the wire frame panels with all exterior surfaces ground smooth prior to powder coat finish.
- C. All mounting clips shall be fabricated from 14 gauge or thicker, galvanized steel sheet stock. All bending, forming and drilling shall be done prior to powder coat finish.
- D. Finish: Commercial Grade Finish – All panels, trim and miscellaneous clips shall be cut, drilled and fabricated and then receive a multi-grade phosphate wash and a thermally-set zinc rich primer prior to a thermally-set powder paint in matte wrinkle green.

#### 2.02 MANUFACTURER

Landscape Metal Screen shall be manufactured by Green Screen, 1743 S. La Cienega Blvd., Los Angeles, CA 90035-4650 (phone: 1-800-450-3494 e-mail: [www.greenscreen.com](http://www.greenscreen.com)), or approved equal.

### PART 3 – EXECUTION

#### 3.01 INSPECTION AND PREPARATION OF SURFACES

- A. Inspection of base: Before starting the installation of Landscape Metal Screens, examine all surfaces on which the Landscape Metal Screens are to be mounted. Examination includes moisture, and alkali testing of concrete. Any defective surfaces or conditions preventing proper installation of the work shall be corrected as required.

- B. Responsibility: Nothing specified herein shall be construed as relieving the Contractor of any responsibility for the quality of the finished installation. Surfaces on which Landscape Metal Screens are to be mounted shall be level and in proper condition in every respect for an acceptable installation.

### 3.02 INSTALLATION

Install Landscape Metal Screens square, plumb and true alignment in accordance with manufacturer's recommendations and approved shop drawings.

### 3.03 CLEANING AND REPLACEMENT

- A. Cleaning and Sealing: Clean all components of Landscape Metal Screens thoroughly in accordance with the flooring manufacturer's recommendations.
- B. Remove and replace any components or entire panel which are dented, chipped or damaged.

**END OF SECTION**

## **SECTION 02825**

### **ORNAMENTAL STEEL FENCE SYSTEM, INDUSTRIAL**

#### **PART 1 – GENERAL**

##### **1.01 SUMMARY**

The contractor shall provide all labor, materials and appurtenances necessary for fabrication and installation of the industrial ornamental steel fence system and CMU pilasters. Also included in the Work at the extent as shown on the Drawings is the relocation of existing chain link fence.

##### **1.02 RELATED SECTIONS**

- A. Section 02315 – EXCAVATING, BACKFILLING, COMPACTING AND GRADING
- B. Section 02826 – ORNAMENTAL STEEL FENCE, ENTRY GATE OPERATOR
- C. Division 3 – CONCRETE
- D. Section 04820 – REINFORCED UNIT MASONRY SYSTEM
- E. Section 05270 – MISCELLANEOUS METALS
- F. Section 05500 – METAL FABRICATIONS

##### **1.03 SYSTEM DESCRIPTION**

The manufacturer shall supply a total industrial ornamental steel fence system and entry gates. The system shall include all components (i.e., pickets, rails, posts, foundations, gates and hardware) required, and all components of the replacement chain link fence.

##### **1.04 QUALITY ASSURANCE**

The contractor shall provide laborers and supervisors who are thoroughly familiar with the type of construction involved and materials and techniques specified.

##### **1.05 REFERENCES**

- A. ASTM A653/A653M – Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy Coated (Galvannealed) by the Hot Dip Process
- B. ASTM A924/A924M – Standard Specification for General Requirements for Steel Sheet, Metallic-Coated by the Hot Dip Process

- C. ASTM A1011/A1011M – Standard Specification for Steel, Sheet and Strip, Hot-Rolled, Carbon, Structural, High-Strength and High-Strength Low-Alloy with Improved Formability.
- D. ASTM B117 – Practice for Operating Salt Spray (Fog) Apparatus
- E. ASTM D523 – Test Method for Specular Gloss
- F. ASTM D822 – Practice For Conducting Tests On Paint and Related Coatings and Materials Using Filtered Open-Flame carbon-Arc Light and Water Exposure Apparatus
- G. ASTM D1654 – Test Method for Evaluation of Painted or Coated Specimens Subjected to Corrosive Environments
- H. ASTM D2244 – Test Method for Calculation of Color Differences from Instrumentally Measured Color Coordinates
- I. ASTM D2794 – Test Method Resistance of Organic Coatings to The Effects of Rapid Deformation (Impact)
- J. ASTM D3359 – Test Method for Measuring Adhesion by Tape Test

#### 1.06 SUBMITTALS

Submittals according to the Conditions of the Contract and of these Specifications, to include:

- A. The manufacturer's literature shall be submitted prior to installation.
- B. Shop drawings of the fence system and all components and attachments shall also be submitted. Submit for approval of Engineer prior to installation and fabrication.

#### 1.07 MEASUREMENTS AND PAYMENT

This bid item to include full compensation for furnishing all labor, materials, tools, equipment, and incidentals and for doing all the work involved in the steel ornamental fence, its pilasters, and pedestrian gate installation, and will be measured for payment by the linear foot to the limits indicated on the Drawings, and will be paid for at the contract unit price per linear foot, as part of the price bid for STEEL ORNAMENTAL FENCE INCLUDING PILASTERS AND PEDESTRIAN GATE, Bid Item No. 32.

Excavation, backfill, grading, compaction and subgrade, foundation and leveling pad preparation, drainage aggregate and pipe, and placement of geosynthetic reinforcement shall be incidental to this bid item.

Included in this Bid Item is the relocation of the existing chain link fence as shown on the drawings.

## PART 2 – MATERIALS

### 2.01 MANUFACTURER

The industrial ornamental steel fence system and entry gates shall conform to Ameristar Aegis II, Classic (3 Rail with Rings) style manufactured by Ameristar Fence Products, Inc., in Tulsa, Oklahoma, or approved equal.

### 2.02 MATERIAL

- A. Steel material for fence framework (i.e., tubular pickets, rails and posts), when galvanized after forming, shall conform to the requirements of ASTM A1011/1011M, with a minimum yield strength of 50,000 psi. The exterior shall hot-dip galvanized with a 0.45 oz/ft<sup>2</sup> minimum zinc weight. The interior surface shall be coated with a minimum 81% nominal zinc pigmented coating, 0.3 mils minimum thickness.
- B. Steel material for fence framework (i.e., tubular pickets, rail and posts), when galvanized prior to forming, shall conform to the requirements of ASTM A924/924M, with a minimum yield strength of 50,000 psi. The steel shall be hot-dip galvanized to meet the requirements of ASTM A653/A653M with a minimum zinc coating weight of 0.90 oz/ft<sup>2</sup>, and coating designation G-90.
- C. The manufactured galvanized framework shall be subjected to the PermaCoat thermal stratification coating process (high-temperature, in-line, multi-stage multi-layer) including, as a minimum, a six-stage pretreatment/wash (with zinc phosphate spray application of a polyester finish. The base coat shall be a zinc-rich thermosetting epoxy powder coating (gray in color) with a minimum thickness of 2 mils. The topcoat shall be a "no-mar" TGIC polyester powder coat finish with a minimum thickness of 2 mils. The color shall be: Commercial Grade Finish, Dark Green to match color of Landscape Metal Screen - see Section 02823. The stratification-coated framework shall be capable of meeting the performance requirements for each quality characteristic shown in Table 1.

| Quality Characteristics | ASTM Test Method              | Performance Requirements   |
|-------------------------|-------------------------------|--|
| Adhesion                | D3359 - Method B              | Adhesion (Retention of Coating) over 90% of test area (Tape and knife test).   |
| Corrosion Resistance    | B117 & D1654                  | Corrosion Resistance over 3,500 hours (Scribed per D1654; failure mode is accumulation of 1/8" coating loss from scribe or medium #8 blisters. |
| Impact Resistance       | D2794                         | Impact Resistance over 60 inch lb. (Forward impact using 0.625" ball).   |
| Weathering Resistance   | D822, D2244, D523 (60 Method) | Weathering Resistance over 1,000 hours (Failure mode is 60% loss of gloss or color variance of more than 3 delta-E color units).               |

Table 1 - Coating Performance Requirements

- D. Material for fence pickets shall be 1" square x 14ga. Tubing. The cross-sectional shape of the rails shall conform to the manufacturer's ForeRunner design with outside cross-section dimensions of 1.75 square and a minimum thickness of 14ga. Picket holes in the ForeRunner rail shall be spaced 4.98" O.C. Picket retaining rods shall be 0.125" diameter galvanized steel. Posts shall be a minimum of 2-1/2" square x 12ga. High quality PVC grommets shall be supplied to seal all picket-to-rail intersections.

## 2.03 FABRICATION

- A. Pickets, rails, and posts shall be precut to specified lengths. ForeRunner rails shall be pre-punched to accept pickets.
- B. Grommets shall be inserted into the pre-punched holes in the rails and pickets shall be inserted through the grommets so that predrilled picket holes align with the internal upper raceway of the ForeRunner rails. (Note: This can best be accomplished by using an alignment template.) Retaining rods shall be inserted into each ForeRunner rail so that they pass through the predrilled holes in each picket, thus completing the panel assembly.
- C. Completed panels shall be capable of supporting a 600 lb. load (applied at mid-span) without permanent deformation. Panels without rings shall be bias able to a 25% change in grade; panels with rings shall be bias able to a 12.5% change in grade.
- D. Gates shall be fabricated using Aegis II panel material and gate ends having the same outside cross-section dimensions as the ForeRunner rail. All rail and upright intersections shall be joined by welding. All picket and rail intersections shall also be jointed either by welding or by the same retaining rod process used for panel assembly.
- E. Pedestrian swing gate to have heavy-duty box hinge, rated to 1000 lb, as manufactured by Ameristar, or approved equal. Lock box to be provided by gate manufacturer to accept lock set keyed to Penitencia Water Treatment Plant master system.
- F. Dual vehicular swing gates installation to have heavy duty box hinges, rated to 1000 lb, as manufactured by Ameristar, or approved equal. Astragal to be installed on the following gate of the pair. Magnetic latch to be installed to prevent the gates from being forced open in the middle when closed.

## PART 3 – EXECUTION

### 3.01 PREPARATION

All new installation shall be laid out by the contractor in accordance with the construction plans.

### 3.02 INSTALLATION



Fence posts shall be set in accordance with the spacing shown in Table 2, plus or minus 1/2", depending on the nominal span specified.

| Span                     | 6' Nominal (67-3/4" Rail) |     |               |         | 8' Nominal (92-5/8" Rail) |         |               |     |
|--------------------------|---------------------------|-----|---------------|---------|---------------------------|---------|---------------|-----|
| Post Size                | 2-1/2"                    | 3"  | 2-1/2"        | 3"      | 2-1/2"                    | 3"      | 2-1/2"        | 3"  |
| Bracket Type             | Standard (BB301)          |     | Angle (BB304) |         | Standard (BB301)          |         | Angle (BB304) |     |
| Post Settings ± 1/2 O.C. | 71-1/2"                   | 72" | 73"           | 73-1/2" | 96"                       | 96-1/2" | 97-1/2"       | 98" |

Table 2 - Post Spacing Requirements

Gate posts shall be spaced according to the gate openings specified in the construction plans. The "Earthwork" and "Concrete" sections of this specification shall govern post base material requirements. Aegis II panels shall be attached to posts using mechanically fastened panel brackets supplied by the manufacturer.

### 3.03 CLEANING

The contractor shall clean the jobsite of excess materials; post-hole excavations shall be scattered uniformly away from posts.

**END OF SECTION**

## **SECTION 02826**

### **ORNAMENTAL STEEL FENCE, ENTRY GATE OPERATOR**

#### **PART 1 – GENERAL**

##### **1.01 DESCRIPTION**

The contractor shall provide all labor, materials and appurtenances necessary for fabrication and installation of the entry gate ornamental steel fence swing gate operator system defined herein.

##### **1.02 RELATED WORK**

- A. Section 02315 – EXCAVATING, BACKFILLING, COMPACTING AND GRADING
- B. Section 02825 – ORNAMENTAL STEEL FENCE SYSTEM, INDUSTRIAL
- C. Section 03310 – CAST-IN-PLACE CONCRETE
- D. Section 04820 – REINFORCED UNIT MASONRY SYSTEM
- E. Section 13126 – PREFABRICATED GUARD HOUSE
- F. Division 16 – ELECTRICAL

##### **1.03 SYSTEM DESCRIPTION**

- A. The Contractor shall supply an operable entry gate high traffic commercial swing gate operator. The system shall include all components (i.e., pickets, rails, posts, foundations, operators, gates and hardware) required.
- B. The Contractor shall install the system.

##### **1.04 QUALITY ASSURANCE**

The Contractor shall provide laborers and supervisors who are thoroughly familiar with the type of construction involved and materials and techniques specified.

##### **1.05 REFERENCES**

- A. ASTM A653/A653M – Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy Coated (Galvannealed) by the Hot Dip Process
- B. ASTM A924/A924M – Standard Specification for General Requirements for Steel Sheet, Metallic-Coated by the Hot Dip Process

- C. ASTM A1011/A1011M – Standard Specification for Steel, Sheet and Strip, Hot-Rolled, Carbon, Structural, High-Strength and High-Strength Low-Alloy with Improved Formability
- D. ASTM B117 – Practice for Operating Salt Spray (Fog) Apparatus

#### 1.06 SUBMITTALS

Submit according to the Conditions of the Contract and these specifications including:

- A. The manufacturer's technical literature shall be submitted prior to installation.
- B. Shop drawings of the fence system, operator and all components and attachments shall also be submitted. Submit prior to installation and fabrication.

#### 1.07 PRODUCT HANDLING AND STORAGE

Upon receipt at the job site, all materials shall be checked to ensure that no damage occurred during shipping or handling. Materials shall be stored in such a manner to ensure proper ventilation and drainage, and to protect against damage, weather, vandalism and theft.

#### 1.08 MEASUREMENT AND PAYMENT

Full compensation for furnishing all labor, materials, tools, equipment, and incidentals, including structure excavation and concrete pad placement for the Entry Gate Operator, and for doing all the work required shall be included in the lump sum price bid for FRONT VEHICLE GATE AND ENTRY GATE OPERATOR, Bid Item No. 34.

Excavation, backfill, grading, compaction and subgrade, foundation and leveling pad preparation, drainage aggregate and pipe, shall be incidental to this bid item.

### **PART 2 – MATERIALS**

#### 2.01 MANUFACTURER

- A. The high traffic commercial swing gate operator manufacturer shall be Elite Access Systems (714) 580-1700, 25741 Commerce Drive: Lake Forest, CA. 92630, [www.eliteaccess.com](http://www.eliteaccess.com); [eliteaccess@earthlink.net](mailto:eliteaccess@earthlink.net), or approved equal. Contact information: Chamberlain – (510) 912-0915 (Local Rep: Bob Field).
- B. The Swing Gate Operator Model shall be dual 1 HP motor DC CSW-200-ULDMDC. It shall include two 1 HP Motors, 120 VAC, 7.9 Amp: Max Gate length 20 feet, Gate Wt. 600#, Max Pull # 250, or approved equal.

#### 2.02 MECHANICAL SPECIFICATIONS

- A. Chassis: Constructed with ¼" sheet metal that is fully sanded, welded, and gold/zinc-plated.
- B. Output Shaft: 1-inch cold-rolled steel.
- C. Worm gear reduction: 30 to 1 worm gear reduction in an oil bath.
- D. Motor: Two ½ - hp, instant reversing, 120VAC, 8/8 amp. One motor opens gate the other one closes it.
- E. Cover: Heavy-duty Fiberglass and stainless steel for heat and corrosion resistance.
- F. Finishing: All metal parts are gold/zinc-plated for rust-proof protection.
- G. Emergency release: Fire Release box Model ACP-17 which can release the gate from facility side only. The Hand Crank is standard.
- H. Cycles: 35 hour with 36 foot gate.
- I. Capabilities: Maximum gate length 37 feet Maximum gate weight 2000 lbs.
- J. Gate traveling speed: 12 inch per second.
- K. Dimensions: L17" x W17" x H26"
- L. Weight: 130 lbs. SHIPPING-142 lbs.
- M. Approval: UL approved for the USA and Canada. Also approved by the City of Los Angeles Department of Building and Safety Electrical Testing Lab.

## 2.03 ELECTRONIC SPECIFICATIONS

- A. Modular board: Use LED's to indicate all input and output functions of the gate operator.
- B. ERD: The two-way reversing sensor shall be set for close or open cycles. If the gate hits an object while closing, it reverses. If it hits an object while opening, it stops.
- C. Digital motor protection: Shuts off the motor after it reaches the stall amp for 3 seconds, then resets itself within 15 seconds.
- D. Timer: Set from 0 to 60 seconds or for a "switch open/switch close" type operation. Master/slave – Dictates synchronized movement between two gate operators.
- E. Three spike suppressors: Fast response time (50 nanoseconds) when subject to an impulse surge (lightning strike) up to 100 amps.
- F. Overload alarm sensor: Alarm is activated (beep sound) whenever the motion of the gate is held by an unwanted object.

- G. Alternate outputs: Master/slave, alarm system, center loop, pilot door, and one 3-push button station.
- H. Electronic inputs: Radio receiver, key switches, inside and outside safety loop, drop-out loop, exit loop, telephone entry system, and computer inputs.
- I. Security & Safety Inputs: Fire department key switch and an emergency access box for the Fire and Police Departments ("Knox Box" by Knox Company or approved equal). One set of photo eye safety controls systems for each gate operator.
- J. Install all wiring, conduit and hardware needed for an Operator station in the new guard house.
- K. Operators to be wired to accommodate sequencing required for dual gate opening and closing.
- L. Gate traveling time: Adjusted by a precision mechanical device and electrical limit switch.

#### 2.04 POLYETHYLENE PLASTIC COVER

The CSW-200-ULDMDC is protected by a ¼" thick, unbreakable polyethylene plastic cover for long life and lasting protection.

#### 2.05 MATERIAL

Steel material shall conform to the requirements of ASTM A1011/1011M, with a minimum yield strength of 50,000 psi. The exterior shall be hot-dip galvanized with a 0.45 oz/ft<sup>2</sup> minimum zinc weight. The interior surface shall be coated with a minimum 81% nominal zinc pigmented coating, 0.3 mils minimum thickness.

#### 2.06 WARRANTY

The warranty shall be a 3 year warranty for commercial use. Elite Access Systems, Inc. warrants all commercial Gate Operators to be free of defects in workmanship and material for a period of 3 years for commercial use, from the date of purchase. The warranty includes 3 years for commercial use for the gear reducer, electric motor, all other components except the electronic control board which is 2 years for commercial use. Wear and tear on all SL3000 gate operators is included in this policy. Vandalism is not covered under this warranty policy. The Contractor shall send the registration card by certified mail within 30 days from purchasing date in order to obtain full warranty from Elite Access Systems, Inc., or approved equal.

### **PART 3 – EXECUTION**

#### 3.01 EXAMINATION

- A. Examine areas and conditions: With installer present, examine area and conditions for a verified survey of property lines and legal boundaries, site

clearing, concrete work, steel frame and support structure work, earthwork, pavement work and other conditions affecting performance.

- B. Proceed with installation only after unsatisfactory conditions have been corrected.

### 3.02 INSTALLATION GENERAL

- A. Use sleeves inserted to depth indicated on contract drawings within proper gate operator concrete foundations. Block gate operator in position and install gate operator on the pad. Check/adjust for proper clearance and function. Properly position and firmly block. Install permanent grout. Make final adjustments for proper gate operation. For motor operated gates, coordinate with motor system installer.
- B. Operator and major components will be numbered per shop drawings. Review numbering system and then properly distribute and stack components (with protective padding) on site for convenient access prior to beginning installation/erection.

**END OF SECTION**

## **SECTION 02827**

### **LOW RAIL FENCE**

#### **PART 1 – GENERAL**

##### **1.01 DESCRIPTION**

Work includes furnishing and installing timber guardrail to match existing timber guardrail on Whitman Way, as shown on the Drawings.

##### **1.02 RELATED SECTIONS**

- A. Section 03310 – CAST-IN-PLACE CONCRETE
- B. Division 3 – CONCRETE

##### **1.03 REFERENCES**

- A. ASTM 449 – High Strength Steel Bolts, Studs, and hreaded Rods for General Application
- B. ASTM 325 - High Strength Structural Steel Bolts, Nuts, and Washers
- C. ASTM 307 – Bolts and Nuts
- D. ASSHTO Standards M 168 – Standard Specification for Wood Products
- E. ASSHTO Standards M 133 - Preservatives and Pressure Treatment Processes for Timber
- F. American Road and Transportation Builders Association (ARTBA) - Bulletin No. 268, A Guide to Standardized Highway Barrier Rail Hardware
- G. State of California Standard Specifications for Local Streets and Roads – July 2002 Edition

##### **1.04 QUALITY ASSURANCE**

Test and Inspections as specified by Contract and these Specifications.

##### **1.05 SUBMITTALS**

Submit according to the Conditions of the Contract and these specifications, all product data to the Engineer.

##### **1.06 MEASUREMENT AND PAYMENT**

Full compensation for furnishing all labor, materials, tools, equipment, and incidentals and for doing all the work to install to the limits indicated on the Drawings will be paid for at the contract unit price per linear foot for LOW RAIL FENCE, Bid Item No. 35.

## **PART 2 – PRODUCTS**

### **2.01 MATERIALS**

- A. Furnish timber conforming to AASHTO M 168. Fabricate the timber rail with dry, well seasoned, and dressed rough sawn, pressure treated Douglas Fir, Southern Pine, or other species having a stress grade of at least 1,500 pounds per square inch.
- B. Post lengths will be specified as shown on the Drawings.
- C. Treat the timber rail with preservative treatment conforming to AWPA Standard C14 except the minimum retention shall be 0.60 pounds per cubic foot.
- D. For fastener hardware, conform to AASHTO M 222.
- E. Unless otherwise specified, anchor bolts and threaded rods shall conform to the requirements in ASTM Designation A 307.

## **PART 3 – EXECUTION**

### **3.01 POSTS**

- A. Posts shall be placed at equal intervals, as shown on the plans, except that the end posts may be spaced closer to adjacent posts if directed by the Engineer.
- B. Hardware: Use 7/8" diameter high strength, button head steel bolts with hex nut and washers.
- C. Secure post to concrete footing with: PL 6" x 3/8" x 1'-0" on each side of wood post and secure plates with L 6" x 4" x 1/2" x 6" and fasten with 7/8" dia. high strength, button head steel bolts @ 2-3/4" C-C horizontal with hex nut and washers. Drill 1-1/4" x 6" holes in concrete, 4 per post. Use 7/8" x 8" continuous threaded rod, hex nut, cut washer, and drill and bond in hole.
- D. Paint timber guard rail to match existing.

**END OF SECTION**



## **SECTION 02900**

### **LANDSCAPE PLANTING**

#### **PART 1 – GENERAL**

##### **1.01 DESCRIPTION**

A. Work included under this Section includes but is not limited to all labor, materials, tools, transportation, services, and work required for the installation and maintenance of all items in this Section and as indicated on Drawings:

1. Provide all plant materials.
2. Soil test of imported topsoil.
3. Provide and incorporate soil amendments and fertilizers, including topsoil.
4. Installation of topsoil where required.
5. Sod and fertilize lawn areas.
6. Plant and fertilize trees, shrubs, vines, and ground cover areas.
7. Stake and brace trees.
8. Provide and install bark mulch.
9. Provide and install metal edging and erosion control mesh.
10. Provide and install root control panels.
11. Provide and install Tree Trunk Protectors.
12. Provide one year Plant Establishment Phase including maintenance of existing landscaping.
13. Perform cleanup and maintenance work, during construction and during Plant Establishment Phase.
14. Provide and apply pesticide treatments.
15. Inspection and acceptance.
16. Record drawings.

##### **1.02 RELATED SECTIONS**

A. Section 02170 – ENVIRONMENTAL MANAGEMENT OF EXCAVATED MATERIALS

- B. Section 02221 – TREE PROTECTION
- C. Section 02940 – HYDROSEEDING
- D. Section 02315 – EXCAVATING, BACKFILLING, COMPACTING AND GRADING
- E. Section 02810 – IRRIGATION SYSTEM

#### 1.03 QUALITY ASSURANCE

- A. Experience: Assign a full-time employee to the job as foreman for the duration of the Contract, with a minimum of four (4) years experience in landscape installation and maintenance supervision, and with experience or training in plant installation, irrigation installation, landscape grading and drainage, management, maintenance, entomology, pest control, soils, fertilizers, and plant identification.
- B. Labor Force: Provide a landscape installation and maintenance force thoroughly familiar with, and trained in, the work to be accomplished to perform the task in a competent, efficient manner acceptable to the Engineer.
- C. Supervision: The foreman shall directly supervise the work force at all times and be present during the entire installation. Notify Engineer of all changes in supervision.
- D. The Contractor shall provide necessary safeguards, and shall exercise caution against injury or defacement of any existing site improvements. The Contractor shall be responsible for any damage resulting from his/her operations, and shall repair or replace such damage at the Contractor's expense to a condition equal to that prior to damage. No trucks or vehicles of any kind shall be allowed to pass over sidewalks, curbs, etc., unless adequate protection is provided.
- E. The Contractor shall ensure that the irrigation system installed shall be maintained to provide the proper coverage and moisture necessary for plant establishment and growth.
- F. The Contractor shall verify the availability of all landscape plants within 10 days following award of the contract. Discrepancies or other problems and all plant substitutions shall be resolved at this time. If a substitute is authorized by the Engineer, it must be of the same size, value, and quality of the original plant. Plant material substitutions will not be permitted unless authorized in writing by the Engineer.
- G. All trees, shrubs and samples of ground covers shall be inspected at the site for approval by the Engineer and must meet the following standards:
  - 1. Quality and size shall conform to the State of California Grading Code of Nursery Stock, No. 1 grade, and to the current issue of the

American Standard for Nursery Stock published by the American Association of Nurserymen.

2. Plant material must be selected from nurseries that have been inspected by state or federal agencies.
  3. Nomenclature will be in accordance with Hortus III.
  4. Plant materials will not be accepted that are overgrown, root-bound, or too recently canned so that the root system is not thoroughly established throughout the can. Pruning shall not be done prior to delivery except as authorized by the Engineer. Plants with scarred trunks or broken bark or branches are not acceptable.
- H. Workmanship: Precautions shall be taken to avoid damage to existing utilities, curbs, walks, and roads. Any areas damaged shall be restored to their original condition at no additional cost to the District.
- I. Cleanup: Keep all areas of work clean, neat, and orderly at all times. Keep all paved areas clean during planting and maintenance operations.
- J. Conduct a Pre-Installation Meeting and site walk through before starting landscaping work.

Discuss and finalize the following:

1. Review project Drawings and Specifications, including revisions, approved shop drawings and documented District landscaping practice. Resolve conflicts, deviations or differences between District practice and project documents.
2. Review drawings, specifications, import soil source and any soil test results.
3. Prepare schedule and sequence of events proposed for plant installation.
4. Review limitations imposed by weather and special requirements of Contractor.
5. Review storage and working areas of site available for use.
6. Clarify specifications, details, applications and installation requirements, and identify work to be completed before start of planting, and other items affecting installation and quality of landscaping.

#### 1.04 SOIL TESTING

- A. Soils Test:

1. Imported Topsoil: Contractor shall submit one soil sample for each batch of imported topsoil to be delivered to the job site. Soil shall be certified as clean and free of hazardous materials or waste contamination and shall be certified as meeting all specifications of Article 2.01. Amend and fertilize soil per Articles 3.04 and 3.05 of this Section.
2. Submit all soils tests to the Engineer for approval prior to placing topsoil. Any work performed prior to submittal of required soils testing and prior to written approval shall be rejected. The District reserves the right to take and analyze samples of import topsoil, amendments or planting mixes for conformity to specifications at any time. Contractor shall submit samples for test upon request. Rejected materials shall be immediately removed from site at Contractor's expense. Cost of testing materials not meeting specifications shall be paid for by the Contractor.

#### 1.05 SUBMITTALS

Submittals according to the Conditions of the Contract and these Specifications, to include:

- A. Samples: As specified herein.
- B. Vendor data for all landscape products.
- C. Soils Test: Submit certifications noted above to the Engineer.
- D. Bark mulch: Submit three one-quart samples and manufacturer's product data, including certification that the product is free of Sudden Oak Death (SOD) carrier.
- E. Gravel: Submit sample to the Engineer.
- F. Staging area plan as coordinated with the Engineer.
- G. Construction access plan as coordinated with the Engineer— see Attachment C.
- H. Label data substantiating that plants, trees, and planting materials comply with specified requirements and are of the correct species and variety.
- I. Product data and testing analysis for fertilizers, amendment, bark mulch, root barrier, pesticides, tree ties, and anti-desiccant, with safety certifications. Submit appropriate State of California agency approval of the use of herbicide for the specific property area where it will be used.
- J. Recommended procedures for the maintenance of the landscaping throughout the year. Submit before beginning of Plant Establishment Phase.

- K. Documentation of current certification as an 'arborist' from the International Society of Arboriculture (ISA) or 'consulting arborist' from the American Society of consulting Arborists (ASCA) for the proposed on-site arborist.
- L. Documentation of current certification as a 'tree worker' from the ISA for personnel doing any pruning.
- M. State Certified Pesticide Applicator and / or State License Pest Control.
- N. Monthly Pesticide Use Report.
- O. Monthly Green Waste Report.
- P. Monthly Integrated Pest Management (IPM) Report.

#### 1.06 DELIVERY, STORAGE, AND HANDLING

- A. Packaged Materials: Deliver packaged materials in containers showing weight, analysis, and name of manufacturer. Protect materials from deterioration during delivery, and while stored at site.
- B. Trees, Shrubs, Sod, and Ground Covers: Provide healthy and vigorous trees, sod, shrubs, and ground covers. Do not prune prior to delivery unless otherwise approved by the Engineer. Do not bend or bind-tie trees in such manner as to damage bark, break branches, or destroy natural shape. Provide protective covering during delivery. Do not drop stock during delivery. Store plant material in an upright position secured against wind damage or vandalism. Keep plant material protected and watered.
- C. Container grown plants shall not be removed from containers until they are to be planted. If a plant is not planted within one-half hour after removal from its container, it shall be replaced in a container.

#### 1.07 PROJECT CONDITIONS

- A. Utilities: Determine location of underground utilities (Contact USA North of Central/Northern California and Nevada, at [www.usanorth.org](http://www.usanorth.org) or 1-800-227-2600 for information on buried utilities and pipelines) and perform work in a manner which will avoid possible damage. Hand excavate as required by Engineer and as shown on the drawings. Maintain grade staked set by others.
- B. Excavation: When conditions detrimental to plant growth are encountered, such as rubble fill, rocks, adverse drainage conditions, or obstructions, notify Engineer before planting.
- C. Protect existing utilities, paving, and other facilities from damage caused by landscape work. Any damage to existing facilities caused by construction shall be repaired at no additional cost to the District.

#### 1.08 SEQUENCING AND SCHEDULING

- A. Timing: Proceed with and complete landscape work as rapidly as portions of the site become available and as according to the agreed-upon work schedule, working within seasonal limitations for each kind of landscape work required.
- B. Do not plant or work soil during rain or when the ground is saturated.
- C. Install planting only after the irrigation system is complete, operating and approved by the Engineer, after incorporation of all topsoil, soil amendments, and fertilizers.
- D. Restrictions: Do not plant when ground is muddy

#### 1.09 MEASUREMENT AND PAYMENT

- A. Soil Preparation. The lump sum price shall include compensation for soil and site preparation including all labor, materials, soil amendments, tools and equipments for SOIL/SITE PREPARATION, Bid Item No. 4.
- B. Imported Top Soil for planting areas will be measured for payment by the cubic yard installed, and will be paid for at the contract unit price per cubic yard. The unit price shall include compensation for furnishing, installing, and maintenance including all labor, materials, tools, equipments for IMPORTED TOPSOIL, Bid Item No. 6.
- C. PLANTING  
The extent of planting is shown on the drawings. Planting shall consist of all work and materials necessary to install containerized plants. The price bid shall include full compensation for furnishing, installing and maintenance, including all labor, materials, tools, equipment, fertilizer, tree trunk protectors, root control panels, , vine anchors, and incidentals for doing all work involved as measured by each plant installed. The cost for generalized planting work specified for the entire project site shall be included in the bids for individual plantings.
  - 1. 1 GALLON PLANT MATERIALS, Bid Item No. 16.
  - 2. 5 GALLON PLANT MATERIALS, Bid Item No. 17.
  - 3. 15 GALLON SHRUB, Bid Item No. 18.
  - 4. 15 GALLON TREE, Bid Item No. 19.
  - 5. 24" BOX TREE, Bid Item No. 20.
  - 6. DISTRICT FURNISHED PLANT INSTALLATION, Bid Item No. 21.  
This item of work includes, but is not limited to, the installation of the 48" Box Trees furnished by the District, in the locations shown on the Drawings.
- D. Payment for the One Year Plant Establishment Phase will be by the month. Included in this item is payment for maintaining the existing and the installed landscaping on the site during the Plant Establishment Phase. The price

#### LANDSCAPE PLANTING

shall include compensation for maintenance including all labor, materials, tools, and equipment, including, but not limited to weed control and irrigation system maintenance, for PLANT ESTABLISHMENT MAINTENANCE, Bid Item No. 24.

- E. Payment for the Maintenance of Existing Landscaping to Remain will be by the month. Included in this item is payment for maintaining the existing landscaping on the site during the Installation Phase. The price shall include compensation for maintenance including all labor, materials, tools, and equipment, including, but not limited to weed control and irrigation system maintenance, for MAINTENANCE OF EXISTING LANDSCAPING TO REMAIN, Bid Item No. 37.
- F. Metal Edging shall be installed as directed by the Engineer and per the drawings. The unit price shall include compensation for maintenance including all labor, materials, tools, equipments for doing all work involved, as part of the price bid per linear foot for METAL EDGING, Bid No. 26.
- G. Mulch will be measured for payment by the cubic yard. The unit price shall include compensation for furnishing, installing, and maintenance including all labor, materials, tools, equipments for doing all work involved, as part of the price bid for MULCH, Bid Item No. 27.
- H. Lawn sod will be measured and paid for by the square foot. The unit price shall include compensation for furnishing, installing, and maintenance during construction including all labor, materials, tools, equipments for doing all work involved, as part of the price bid per square foot for LAWN SOD INSTALLATION, Bid Item No. 22.
- I. Gravel for unplanted areas shall be measured by the cubic yard. The unit price shall include compensation for furnishing all labor, materials, tools and equipment for installing and doing all work involved as part of the price bid for GRAVEL FOR NON LANDSCAPED AREAS, Bid Item No. 25.

## **Part 2 – PRODUCTS**

### **2.01 MATERIALS**

- A. Commercial Fertilizer: Use a complete fertilizer in which part of the elements are derived from organic sources, containing in available form by weight, 6% nitrogen, 20% phosphoric acid, and 20% potassium (Best's Cropmaker or approved equal); and 0% nitrogen, 25% phosphoric acid, and 0% potassium (single super phosphate). Fertilizer shall be in pellet or granular form.
- B. Maintenance Fertilizer: Use a complete fertilizer comprised of 16% nitrogen, 6% phosphoric acid and 8% potassium unless otherwise directed by the Engineer.
- C. Soil Amendment: Nitrogen/Iron stabilized wood residual; 15% maximum proportion of ¼ inch particle and nitrogen/iron stabilized. Supply sample to the Engineer with laboratory organic amendment analysis and suppliers

## **LANDSCAPE PLANTING**

data sheets. The report shall include pH, salinity, particle size ratios, nitrogen content, iron content, and other information considered essential. The salinity level shall not exceed 3.5. If the amendment does not contain at least 0.08% iron, then 10 pounds of iron sulfate per 1,000 square feet should be included in the amendment formulas. The amendment shall contain a minimum organic matter content of 270 pounds per cubic yard of amendment.

D. Topsoil:

1. Provide new topsoil that is fertile, friable, USDA designated as a natural loamy sand or sandy loam, reasonably free of subsoil, clay lumps, brush, weeds and other litter, and free of roots, stumps, stones larger than 1 inch in any dimension, and other extraneous or toxic matter harmful to plant growth.
2. Obtain topsoil only from naturally well-drained sites where topsoil occurs in a depth of not less than 4 inches. Do not obtain from bogs or marshes.
3. Conform to ASTM D 5268, pH range of saturated paste of 5.5 to 7.5 without high lime content.
4. USDA Classification of fraction passing a 2.0 mm sieve:
  - a. Coarse sand particle size range from 0.5 to 2.0 mm maximum 25 %, minimum 0%.
  - b. Silt plus clay particle size range from less than 0.05 mm at a maximum 30 % and a minimum 10%.
  - c. Gravel particle size range from 2 to 13 mm at 10% maximum and 0% minimum.
  - d. Rock particle size range from ½" to 1" at a maximum of 10% by volume to a minimum of 0% with none greater than 1".
  - e. Organic matter at a maximum of 15%.
  - f. Salinity: Saturation Extract Conductivity (Ece) less than 3.0 dS/m/cm @ 25 Deg. C.
  - g. Sodium: Sodium absorption Ratio (SAR) less than 6.0.
  - h. Boron: Saturation Extract Concentration less than 1.0 ppm.
  - i. Soil to contain the following quantities of available nutrients to support normal plant growth:



| Micronutrients | Range       |
|----------------|-------------|
| N              | 20-35 ppm   |
| P              | 10-40 lb/Ac |
| K              | 3.5-5%      |
| Mg             | 10-25%      |
| Ca             | 60-80%      |
| Zn             | 1-2 ppm     |
| Mn             | 3-9 ppm     |

- E. Water: The District will make water available.
- F. Staking, Guying, and Tree Protector Materials:
  - 1. Stakes: Eight-foot long lodge-pole pine tree stakes.
  - 2. Tree Ties: Approved flexible rubber tree ties in a figure eight pattern.
  - 3. Tree Trunk Protectors: TUBEX Tree shelter, or approved equal.
    - a. Materials: UV-stabilized polypropylene co-polymer.
    - b. Construction: Seamless walled.
    - c. Rim: Continuous, scrape flare.
    - d. Height: 4 feet.
    - e. Diameter: 4 inches.
    - f. Color: Green.
    - g. Life Span: Anticipated 5-years.
    - h. Fastening Ties: Release nylon, ratchet-locking.
    - i. Special Features: A perforated line which splits to prevent tree strangulation.
    - j. Mesh Netting: To prevent songbirds from becoming trapped in the tree shelter.
- G. Metal Edging:
  - 1. Edging shall be installed prior to installation of adjacent sprinklers.
  - 2. Edging shall be installed true to line and grade as indicted on the drawings and as directed by the Engineer. Edging shall be set flush with adjacent paving.

3. Metal Edging shall be aluminum landscaping edging as manufactured by Permaloc, or approved equal.

H. Plant Materials:

1. Plant material shown on the drawings shall be provided by the Contractor. Quality and size shall conform to the State of California Grading Code of Nursery Stock, No. 1 grade. Use only nursery-grown stock. The Engineer will inspect plants for approval prior to any installation. The Contractor shall take measures to ensure that all plant species shown will be available in time for planting. The Contractor shall secure a growing contract with an approved nursery, if necessary, to ensure the availability of plant material. Certification of inspection shall be furnished as may be required by County or State authorities.
2. Plant materials will not be accepted that are overgrown, root-bound, or too recently canned so that the root system is not thoroughly established throughout the can. Pruning shall not be done prior to delivery except as authorized by the Engineer.
3. Inspection:
  - a. Right of inspection for approval or rejection is reserved at the place of growth and/or on the project site at any time upon delivery or during the work. Plants shall be inspected for size, variety, condition, defects, or injury.
  - b. The first inspection shall be included in the price bid for each planting bid item.
  - c. Any additional required inspections caused by rejection of plant materials shall be the responsibility of the Contractor.
  - d. Provide transportation for the Engineer to the place of growth for all inspections of plant materials.
  - e. Certification of inspection shall be furnished as may be required by the County or State authorities.
4. Lawn Sod:
  - a. Source: Commercial Sod Nursery; obtain Engineer's approval prior to delivery to the site. "Medallions Plus" sod as supplied Pacific Sod, 2006 Loquat Ave, Patterson, CA 95363, (800-692-8690) or approved equal.
  - b. Sod shall be healthy, field grown sod, at least 9-months old, free from other grasses, weeds, insect eggs, diseases, stones and debris.

- c. Protect sod in transit and after delivery to the project site. Remove rejected material from the site immediately.
- 5. Plants shall be protected from sun and wind on the site and in transit, and shall be adequately watered on the site until planted.
- 6. Plant label shall identify each species and variety. Substitutions will not be accepted without Engineer's review and prior approval.
- 7. Quantities shall be furnished as needed to complete work shown on Drawings. The Contractor shall be responsible for installing all plant material as drawn. Quantities or total areas listed on the plans are for the convenience of the Contractor only.
- I. Bark Mulch: Recycled fir or redwood bark mulch such as Pro Chip or equal from ¼" to 1" maximum size unless otherwise noted. Mulch to be dark brown in color, submit sample for review and approval. Provide S.O.D.-free certification.
- J. Planting Slow Release Fertilizer Tablets: 21 grams each, guaranteed analysis 20-10-5.
- K. Pesticides: Granular or wettable powder-type herbicide, EPA, State and City approved, cleared for type of ornamental planting used. Submit name and chemical analysis for Engineer's review and approval.
- L. Root Control Panels: Material shall be made from high-density polyethylene in accordance with ASTM D 638, D 256, and D 648 test methods.
- M. Anti-Desiccant: Emulsion type, film-forming agent designed to permit transpiration, but retard excessive loss of moisture from plants. Deliver in manufacturer's fully identified containers and mix in accordance with manufacturer's instructions. Meet ASTM E 96. Supplier shall furnish evidence that material can be safely used on plant material specified.
- N. Gravel cover for drainage and in unplanted areas. Provide ¾ inch grey drain rock to match gravel on existing walkway. Gravel shall consist of hard, durable particles of stone or rock, screened or crushed to the specified sizes and gradations, free of vegetable matter, lumps or balls of clay, and other deleterious matter. Fill areas to a depth of 3 inches where cover is required, as directed by the Engineer.

### **PART 3 – EXECUTION**

#### **3.01 PREPARATION**

- A. Protect existing to remain structures, utilities, sidewalks, pavements, trees, ground covers, plantings and other facilities from damage caused by planting operations.
- B. Provide erosion-control measures to prevent erosion or displacement of soils and discharge of soil-bearing water runoff or airborne dust to adjacent properties and roadways.

### **LANDSCAPE PLANTING**

### 3.02 SOIL PREPARATION

- A. Cross-rip to a 12" depth in at least two perpendicular directions using a 12" spike rototiller. Remove stones larger than 1 inch in any dimension, and sticks, roots, rubbish, and other extraneous matter. After cross-ripping, incorporate iron sulfate at the rate of 10 lbs per 1000 square feet to an 8" depth until thoroughly blended into a uniform mix.
- B. Maintain moisture conditions within the soils during preparation to allow for satisfactory compaction. Suspend operations if the soil becomes wet. Provide adequate equipment to achieve consistent and uniform compaction of the soils. Do not use vibrator equipment to compact topsoil.
- C. Thoroughly soak the soil prior to planting. Let soil stand for a minimum of 3 days after soaking to accommodate initial settling. Reset grades after soil has settled.
- D. Place approved topsoil where needed to achieve original contours shown on plans. Finish grade all areas at a 2% minimum slope to drainage inlets unless otherwise noted on the drawings. No ponding water will be allowed.
- E. Incorporate amendments and fertilizers into all groundcover areas per these specifications.
- F. Do not transport, mix, or place import topsoil when soil is wet, or during rain. If soil placement operations are to occur during the rainy season, soil must be obtained after adequate time has passed to allow soil to drain prior to transport and no sooner than one week after any rain has occurred. Soil that is placed and found to have insufficient drainage will be rejected and the Contractor will replace the topsoil at no additional cost to the District.

### 3.03 PLANTING PREPARATIONS

- A. When preliminary grading, including weeding, soil amendment and fertilizing operations have been completed and the soil has dried sufficiently to be readily worked, planting areas shall be graded to uniform levels or slopes at a minimum of 2 percent. Minor adjustments to finish grades shall be made to facilitate positive drainage as needed. Low spots and pockets shall be graded to drain properly. Finish grade of planting areas shall be one inch below paved areas unless noted otherwise. Grading shall be done when soil is at optimum moisture content for working. Rock and debris more than 1 inch in diameter shall be removed from the site.
- B. Test drainage of plant beds and pits by filling with water twice in succession. Conditions permitting the retention of water in planting beds for more than twenty-four (24) hours shall be brought to the attention of the Engineer. See drainage detail 3 on drawing L-4. If rock, underground construction work, tree roots, poor drainage, or other obstructions are encountered in the excavation of plant pits, notify the Engineer prior to planting.
- C. Apply a pre-emergent herbicide, per manufacturer's directions and as allowed by State, Federal, and Local Restrictions.

- D. Planting material shall be well watered in the container prior to planting.
- E. Cultivate and incorporate amendments and fertilizers as required.
- F. Contractor shall stake all shrub and tree locations prior to planting.

### 3.04 SHRUBS AND GROUND COVER PLANTING

- A. Soil amendments shall have been incorporated into the soil prior to ground cover planting as specified per soil tests.

For areas that will be amended for planting groundcover the following materials should be uniformly spread and thoroughly blended with the top 6 inches of soil:

#### Amount / 1000 Square Feet

|               |                                       |
|---------------|---------------------------------------|
| 6 Cubic Yards | Nitrogen Stabilized Organic Amendment |
| 18 Lbs.       | 6-20-20 Commercial Fertilizer         |
| 9 Lbs.        | Potassium Sulfate (0-0-50)            |
| 18 Lbs.       | Soil Sulfur                           |
| 90 Lbs.       | Agricultural Gypsum                   |

1. The amendment rate is based on an organic matter content of 260 pounds per cubic yard of amendment and this may be adjusted depending on the organic content of the amendment selected. If nutrient-rich compost is used, then it may be suitable to modify the rates of 6-20-20 and potassium sulfate.
  2. About three weeks after these areas have been planted a slow release material such as TriKote 42-0-0-(polymer-coated sulfur-coated urea) may be applied at a rate of 6 pounds per 1000 square feet. This should maintain adequate nitrogen availability for about three months.
- B. All shrubs and ground cover areas shall have complete coverage at spacings noted on plans.
  - C. Thirty (30) days after planting and at 45 day intervals, replace all dead plants and fill in bare ground cover areas. Top-dress with 16-6-8 fertilizer at 6 lbs/1000 sq. ft. when ground cover is dry and thoroughly irrigate promptly after application.
  - D. Plant shrubs and ground cover plants in evenly spaced rows with staggered triangulated spacing at intervals indicated on Drawings. Water immediately after planting and in sufficient quantity to saturate the soil around and below plants to depth of 8 inches.

### 3.05 TREE PLANTING

- A. Mark locations on site using stakes or similar means and secure acceptance by the Engineer before plant holes are dug.
- B. Dig pits as shown on Drawings. Plant pits shall be two times the width of the root ball and no deeper than the root ball.
- C. After pits are dug, break sides and bottom of holes to open wall of pit for root penetration. Plant pits shall be tested for proper drainage. Before proceeding with the planting, Contractor shall fill plant pits with water to see if subsoil conditions will cause retention of water for more than 24 hours. If drainage is found to be insignificant, Contractor shall bring corrective proposals to the attention of the Engineer.
- D. After removing plants from their containers, disentangle any small roots that encircle the container. Do not cut or disturb root ball unless root scoring is approved by the Engineer. Inspect all plants for root bound condition. Do not install root bound plants or plants with cracked or broken root balls.
- E. Backfill plant holes with finely divided loose soil free from rocks, clods, or lumpy material and prepare backfill mix as specified below. The top 6" of any pit deeper than 24" shall be filled with clean imported topsoil as specified above. All excavated material shall be managed according to Section 02170 -- Environmental Management of Excavated Materials.
  1. After planting holes have been dug, soil to be backfilled shall be thoroughly mixed using the following quantities per cubic yard of backfill mix:

|            |  |
|------------|--|
| 1 lb.      | 6-20-20 Fertilizer (Best's Cropmaker, or approved equal) |
| ½ lb.      | 0-0-50 Potassium Sulfate                                 |
| 1-1/2 lbs. | Iron sulfate (31% Fe)                                    |
| 5 lbs.     | Agricultural Gypsum                                      |

The backfill shall be blended with nitrogen/iron stabilized organic amendment at the rate of 3 parts of soil to 1 part amendment.

Place slow release fertilizer tablets in backfill at label rates. Agriform or approved equal 21-gram fertilizer tablets, 20-10-5:2 per 1 gallon can; 3 per 5 gallon can; 4 per 15 gallon can; specimen trees- 3 per inch of caliper.
  2. After planting is complete a nitrogen only fertilizer should be applied at a modest rate of slow release material as TriKote 42-0-0 (polymer-coated sulfur-coated urea). A suitable rate would be 1-ounce distributed within a 2-foot radius around each plant. This is equivalent to 5-pounds per 1000-square feet.
  3. Place slow release fertilizer tablets in all plant pits at label rates.

- F. Set plants in backfill mixture, in flat bottom of holes, to such depth that the root crown will be 2 inches above finished grade. Water before adding remainder of backfill. Backfill rest of hole, including imported topsoil in the top 6" in the pits previously designated and soak thoroughly to avoid air pockets. Voids created by soaking shall be refilled with imported topsoil.
- G. Water backfill until saturated to the full depth of the hole.
- H. All trees planted shall have watering basins around them. Basin diameters shall be the same size as the tree or shrub's root ball. Basins shall be formed with level bottoms and 4 inch high walls. Basins shall be constructed of imported topsoil. Basins shall receive 3" depth of approved bark mulch, unless otherwise indicated.
- I. Install tree trunk protectors per manufacture's recommendations. Double stake trees as shown on drawings. Stakes shall be driven firmly 3 feet deep into the ground along side of root ball prior to backfilling hole. Tie trees to the stake as detailed with flexible rubber tree ties. The tie shall form a figure eight and be firmly nailed to back of stake.
- J. All trees closer than 8'-0" from curbs, foundations, sidewalks, roads, or other hardscape items, shall be installed with linear root deflector panels protecting adjacent hardscape items, but never fully surrounding root ball; see articles 2.01 L and 3.09.
- K. All trees shall be planted a minimum of 5'-0" away from storm drains, or other underground utility lines (or per code), and 10'-0" minimum away from sanitary sewer lines (or per code), and 12'-0" minimum away from utility poles or light standards (or per code).

### 3.06 SODDED LAWNS

- A. After the area has been loosened, and amended, per Section 3.04, shall be hand raked to remove all clods, weeds, roots, debris and rocks 1-inch in diameter and larger.
- B. After the areas have been prepared, no heavy objects except lawn rollers shall be taken over the areas at any time.
- C. Final grades shall be approved by the Engineer prior to sod placement.
- D. Moisten sod bed thoroughly.
- E. Lay sod with closely fitting joints, staggering the ends of the strips in alternating rows. Use sod pieces no smaller than one square foot for plugging gaps.
- F. Do not leave any sod stockpiled overnight.
- G. Watering: After sod is laid, irrigate thoroughly so that water penetrated soil to a depth of 6-8 inches.

- H. When surface of grass has dried, roll to eliminate irregularities and bring all sod in contact with the sod bed.

### 3.07 TRAINING OF VINES AND ESPALIERS

- A. Place as many anchors as required to support the plant with branching structure spread as directed by the Engineer.
- B. Tie branches to anchors with vinyl ties.

### 3.08 BARK MULCH INSTALLATION

In areas as shown on drawings shall receive 3" depth recycled fir or redwood bark mulch as specified in Article 2.01.

### 3.09 ROOT DEFLECTOR PANEL INSTALLATION

At each tree requiring root deflectors, as specified in Article 3.05 J, install a 10 foot long by 24 inch deep section of linear interlocking root deflector panel, centered on tree (5 feet on each side), located at curb, foundation, utility, sidewalks, other hardscape items, unless otherwise directed. Root deflectors shall be installed in all locations where drip line of trees overhangs paved areas, utilities or structures, per Article 3.05 J.

### 3.10 PESTICIDE APPLICATION

- A. All shrubs and ground cover areas shall receive pre-emergence weed treatment in accordance with manufacturer's instructions. Keep records of all pesticides applied on District Property.
- B. Apply pesticides when considered necessary to control weeds, undesirable grasses, insects and fungi at any time during the establishment Phase.
- C. Apply only those pesticides, herbicides or fungicides in accordance with EPA label restrictions and recommendations. All pesticide submittals shall be approved by the Engineer prior to application. The Contractor shall notify the Engineer no less than 48 hours in advance of any pesticide application.
- D. The Contractor shall provide daily reports stating areas treated with each chemical, quantity applied, and spray mixture or formulation used to the Engineer.
- E. The Contractor shall apply pesticide under supervision of a certified applicator and the Engineer.
- F. Apply in well-ventilated areas. Avoid inhalation, injection, or spilling on clothing or skin.
- G. Wear all personal protective equipment (PPE) in accordance with manufacturer's label and material safety data sheet recommendations.
- H. Follow all OSHA, Federal, State and District regulations and restrictions.



- I. Conform to the selection and usage guidelines in ANSIZ88.2. Use only those chemicals which are cleared for the type of ornamental planting to be used for each area.

### 3.11 INSPECTION AND APPROVAL

- A. The Contractor shall request inspections a minimum of 4 days in advance for the following portions of the work:

1. Upon completion of topsoil preparation.
2. For Irrigation and electrical inspections and testing see Section 02810.
3. Upon completion of amendment/fertilizer installation and fine grading.
4. Prior to planting, and after tree and shrub locations have been staked or marked.

The Contractor shall be responsible for requesting the appropriate inspections and shall limit the number of inspections to two per item. A maximum of 8 inspections may be called for approval of marked plant material locations prior to planting and a maximum of 8 inspections may be called for approval of planted material. The Contractor is responsible for phasing the work to accommodate these inspections. Any additional inspections required will be paid for by the Contractor at the hourly rates of the District. The Engineer reserves the right to deduct from the contract to pay for additional site visits required to review work previously found to be unacceptable.

- B. The Contractor shall request inspections a minimum of 2 weeks in advance for the following portions of the work:

1. Upon completion of planting and prior to the start of the Plant Establishment Phase.
2. Upon completion of the Plant Establishment Phase.

### 3.12 PLANT ESTABLISHMENT PHASE MAINTENANCE

- A. The Plant Establishment Phase shall begin on the date the Engineer gives written provision and acceptance of the work of the Installation Phase. The Plant Establishment Phase shall be for one calendar year
- B. Maintain the landscaping installed during the Installation Phase
- C. Protect all landscaped areas against damage, including erosion and trespass, and provide proper safeguards. Maintain and keep in good repair all temporary barriers erected to prevent trespass. Remove litter and trash from landscaped areas every week.

- D. Keep all walks and roads clean. Keep all areas free from debris resulting from landscape maintenance.
- E. Maintain adequate moisture depth in soil to ensure vigorous growth.
- F. Keep Contract areas free of weeds by cultivating, hoeing, or hand pulling. Use of herbicides will not relieve the Contractor of the responsibility of keeping areas free of weeds over 1 inch high and/or cover at all times.
- G. Control and provide protection from pest and fungus infestation.
- H. Prune as necessary to keep all plant material in a healthy and vigorous growing condition. All pruning must first be authorized by the Engineer.
- I. Contractor shall fertilize all trees and ground cover areas with 16-6-8 at a rate of 6 pounds per 1000 square feet 30 days after planting. Re-treatment should be performed at 45 to 60 day intervals.
- J. Tree trunk protectors shall be kept in upright position and in good condition. Remove and dispose of only as directed by the Engineer.
- K. Replacement of Plants: Replace plants that die back and lose form and size originally specified, even though they have taken root and are growing after they die back.
- L. At the end of the Landscape Installation Phase and at the end of the Plant Establishment Phase, all plants must be vigorous, healthy, free of dead or dying tips, and be of normal density and color.

### 3.13 MAINTENANCE OF EXISTING LANDSCAPE TO REMAIN

- A. Existing landscaped areas including grassy slopes shall be maintained according to these specifications throughout the life of the contract.
- B. Maintain adequate moisture depth in soil to ensure vigorous growth.
- C. All existing landscaped areas, pavement, concrete, and gravel shall be kept free of weeds at all times. Use of herbicides will not relieve the Contractor of the responsibility of keeping areas free of weeds. No weeds shall exceed 2 inches high and/or cover.
- D. Control and provide protection from pest and fungus infestation and prune as necessary to keep all plant material in a healthy and vigorous growing condition. All control efforts and pruning must first be authorized by the Engineer.
- E. All vegetation shall be kept trimmed 2 feet away from any structures, buildings, sidewalks, stairways, valve boxes, utility boxes, and fire hydrants. All vegetation shall be trimmed 1 foot away from curbs.
- F. All grassy slopes shall be mowed to a height of 4 inches. Mowing shall be done between May 1 to May 15 or as directed by the Engineer. Another mowing shall be done between August 1 to August 15. District provided

training (approx 2 hours) in Upland Bird Nesting surveys is required for mowing supervisor and crew leaders. Training is required prior to the start of the mowing.

- G. Broadleaf weeds in grassy slopes shall be controlled / killed before they reach 6 inches in height or before flowering. These areas shall be treated with a District approved herbicide. Engineer shall be notified no less than 48 hours prior to the time of application.
- H. All existing irrigation to remain shall be maintained for proper operation and adjustment. The irrigation schedule shall be approved by the Engineer. Any damage or deficiencies in the irrigation system shall be reported to the Engineer. All solenoid valves, controllers, sprinkler lines, controller wiring, and sprinkler heads shall be repaired or replaced in kind. Repairs shall be completed within 1 work day of discovery or notification by the Engineer. All repair work to existing irrigation to remain shall be approved by the Engineer.
- I. Water conservation practices shall be utilized. Watering schedules shall promote deep penetration with minimal erosion.

#### 3.14 FINAL PLANTING INSPECTION AND ACCEPTANCE

- A. A final inspection of the project shall be conducted during the first two weeks of the last month of the Plant Establishment Phase. The final inspection shall include a final test of the irrigation system. At the completion of the inspection, the Engineer will provide the Contractor with a punch list of items to be completed, and the Contractor shall complete the items on the punch list prior to the end of the Plant Establishment Phase. The Engineer will recommend that the work be accepted upon satisfactory completion of the items on the punch list.
- B. Replacement Criteria: Replace those plants which die back and lose form and size originally specified, even though they have taken root and are growing after they die back. Replace plants at least 30 days prior to the final inspection such that those plants have taken root and are growing.

#### 3.15 PRUNING AND MAINTENANCE OF EXISTING TREES

- A. In addition to normal maintenance as specified herein for new plant materials, work of this Contract shall include supplemental watering and feeding of any trees that experience loss of root system as a result excavation or new construction per the recommendation of a qualified arborist at no additional cost to the District.
- B. Pruning work shall consists of removal of all dead wood and removal of branches to clear new construction work and to provide clearances along roads and sidewalks from all plant materials designated to remain within the construction area. All materials removed from existing trees shall be removed from the site. Pruning shall be at the direction of the Engineer. All cuts larger then ½ inch diameter shall be treated with specified tree paint.

- C. Work shall be done by a qualified arborist, who shall be present on the site when excavations and compactions are made on near existing trees. The arborist shall recommend and provide treatment, materials and labor required to ensure the good health of the trees.

**END OF SECTION**

## **SECTION 02940**

### **HYDRO-SEEDING**

#### **PART 1 – GENERAL**

##### **1.01 SCOPE OF WORK**

Provide all materials, labor and equipment necessary to complete all work as shown on the drawings and as specified herein, including, but not limited to, the following:

- A. Apply specified treatments to all cuts and fill slopes, soil stockpiles, all disturbed areas and other areas as specified on the plans.
- B. Install all temporary erosion control devices as per specification.
- C. All other labor and materials reasonably incidental to the satisfactory completion of the work, including clean up of the site.

##### **1.02 RELATED SECTIONS**

- A. Section 02315 – EXCAVATING, BACKFILLING, COMPACTING AND GRADING
- B. Section 02810 – IRRIGATION SYSTEM
- C. Section 02900 – LANDSCAPE PLANTING

##### **1.03 SITE CONDITIONS**

It is the responsibility of the Contractor to visit the site to determine existing conditions; including access to the site, the nature and extent of existing improvements upon adjacent public and private property, the nature of materials to be encountered, and other factors that may affect the work of this section.

##### **1.04 SUBMITTALS**

Submittals according to the Conditions of the Contract and these Specifications, to include:

The Contractor shall submit manufacturer's letter of compliance, samples and manufacturer's literature for the following items:

- 1. Seed Mixes and individual items
- 2. Mulches
- 3. Binders/Tackifiers
- 4. Fertilizer

#### 1.05 WORK SCHEDULE

The Contractor shall proceed with work as rapidly as portions of the site become available and as according to the agreed-upon work schedule, working within seasonal limitations. Do not hydro-seed or work soil during rain or when the ground is saturated.

#### 1.06 PRODUCT, DELIVERY, STORAGE AND HANDLING

- A. All products shall be delivered to the site in manufacturer's unopened standard containers bearing original labels showing quantity, analysis and name of manufacturer.
- B. All materials shall be stored in designated areas and in such a manner as to protect them from weather or other conditions that might damage or impair the effectiveness of the product.

#### 1.07 ANALYSIS OF SAMPLES AND TESTS

- A. The Engineer reserves the right to take and analyze samples of materials for conformity to the specifications at any time. On request, seed shall be delivered to owner 30 days prior to seeding so seed can be tested. Seed samples shall be drawn in accordance with procedures outlined in AOSA, Association of Official Seed Analysts.
- B. Rejected material: Rejected materials shall be removed immediately from the site at Contractor's expense. Contractor shall pay the cost of testing replacement materials.

#### 1.08 FINAL ACCEPTANCE AND WARRANTY PERIOD

The Contractor shall not provide warranty beyond those granted by any of the material manufacturers. It shall be the right of the Engineer to inspect work for compliance to the specifications and advise the Contractor in writing, of any work that is found to deviate from specifications. Hydro-seeded areas shall have 100% cover after germination and throughout Plant Establishment Phase.

#### 1.09 MEASUREMENT AND PAYMENT

This item will be measured for payment by the square foot amount. The price shall include compensation for maintenance, including all labor, materials, tools, and equipment for doing all work involved, as part of the price bid for HYDRO-SEEDING, Bid Item No. 23.

### **PART 2 – PRODUCTS**

#### 2.01 GENERAL

All products shall be in conformance with the specifications listed below. Any changes to products to be used shall be approved, in writing, by the Engineer prior

HYDRO-SEEDING

02940 - 2

to job site delivery. The hydro-seed mixture shall be light green in color when applied.

## 2.02 SEED MIXES

### A. Mix "A" Composition:

Seed shall be as specified below: Seed mix from S&S Seeds, phone number (805) 684-0436, or approved equal.

Pure Live Seed

| <u>Lbs/Acre</u> | <u>Species</u>                  |
|-----------------|---------------------------------|
| 8.0             | Vulpia microstachys             |
| 4.0             | Lupinus nanus                   |
| 0.2             | Mimulus aurantiacus aurantiacus |
| 1.0             | Eriophyllum staechadifolium     |
| 2.0             | Clarkia botata                  |
| 2.0             | Eschscholzia maritima           |
| 1.0             | Iris douglasiana                |
| 2.0             | Eriogonum parvifolium           |
| 1.0             | Achillea lanulosa               |
| 4.0             | Lotus scoparius scoparius       |

### B. Mix "B" Composition:

Seed shall be as specified below: One potential source of seed mixes is Pacific Coast Seed, 533 Hawthorne Way, Livermore, CA 94550, (925) 373-4417, or approved equal.

Penitencia WTP Mix:

| <u>PLS #/Ac.</u> | <u>SPECIES/Common Name</u>                                     |
|------------------|--|
| 9.0              | Hordeum californicum/ Prostrate California Barley              |
| 9.0              | Bromus carinatus, California Brome*                            |
| 5.0              | Nassella pulchra/ Purple Needlegrass*                          |
| 8.0              | Elymus glaucus, Blue Wildrye*                                  |
| 3.0              | Melica imperfecta/ Coastal Oniongrass                          |
| 1.0              | Lasthenia californica, Dwarf Goldfields*                       |
| 1.5              | Plagiobothrys infectivus, Popcornflower*                       |
| 4.0              | Plantago erecta, Serpentine Plantain*                          |
| 3.0              | Vulpia microstachys, Six Weeks Fescue*                         |
| 2.5              | Lupinus nanus, Sky Lupine                                      |
| 3.0              | Eschscholtzia var maritima, Coastal Poppy                      |
| 2.0              | Mimulus auranticus, Sticky Monkeyflower                        |
| 0.8              | Clarkia botata   |
| 1.0              | Iris douglasiana, Douglas Iris                                 |
| 0.5              | Achillea millifolium, White Yarrow, Northern California Native |
| 4.0              | Lotus scoparius, Deerweed                                      |

HYDRO-SEEDING

02940 - 3

All seeding rates are in PLS #/Ac (Pure live seed lbs. per acre).

\* These seeds shall be from plants that are collected or cultivated from seed sources from Santa Clara Valley watershed sources.

C. Quality:

All seed shall be in conformance with the California State Seed Law of the Department of Agriculture. Each seed bag shall be delivered to the site sealed and clearly marked as to species, purity, percent germination, dealer's guarantee, and dates of test. In addition, the container shall be labeled to clearly reflect the amount of Pure Live Seed (PLS) contained. Prior to seeding at the request of the Engineer, the Contractor shall provide a letter of certification, original Association of Official Seed Analyst (AOSA) seed test results, and calculations of PLS content.

All legume seed shall be pellet-inoculated and provided in Bulletin AXT-280 of the University of California Cooperative Extension, "Pellet Inoculation of Legume Seed." Inoculant's sources shall be species specific and shall be applied at a rate of 2 pounds of inoculants per one hundred pounds of seed.

## 2.03 MULCH AND THE ORGANIC STABILIZER/TRACKIFIER

- A. 100% straw-hydro seed mulch shall be composed of Bluegrass or types of straw with no growth or germination inhibiting substances, and shall be manufactured in such a manner that when thoroughly mixed with seed, fertilizer, organic stabilizer, and water, in the proportions specified, will form a homogeneous slurry which is capable of being sprayed to form a porous mat. The fibrous mulch in its air-dry state shall contain not more than 15% by weight of water. The fiber shall have a contemporary green dye and shall be accompanied by a certificate of compliance stating that the fiber conforms to these specifications.

| <u>Lbs/Acre</u> | <u>Species</u>              |
|-----------------|-----------------------------|
| 4000            | Hydrostraw                  |
| 60              | AM-120 Mycorrhizal Inoculum |
| 200             | Ecology Controls M-Binder   |
| 1000            | Fertilizer Biosol 7-2-3     |

- B. Shall be an organic substance supplied in power form and shall be psilium-based and packed in clearly marked bags stating the contents of each package. The California Department of Food and Agriculture shall certify the material as an Auxiliary Soil Chemical.

## 2.04 FERTILIZER

- A. To be used in the slurry, shall be of commercial quality, conform to the requirements of the California Food and Agriculture Code, shall have a guaranteed analysis for nitrogen, phosphorus and potassium. Products specified as slow-release shall have been tested and demonstrate a nearly



linear release curve.

- B. Provide following soil amendments:

Amount / 1 Acre

260 Lbs.

0-0-50 Potassium Sulfate

1700 Lbs.

Agricultural Gypsum

| Supplement A               |            |                              |
|----------------------------|------------|------------------------------|
| II. Two Step Hydro-seeding |            |                              |
| Step 1:                    |            |                              |
| Lbs/Acre                   | Kg/Hectare | <u>Hydroseed Mix Summary</u> |
| 2000                       | -          | Hydrostraw                   |
| Recommended Spec           |            |                              |
| 1000                       | -          | <u>Seed</u>                  |
| 60                         |            | Fertilizer Biosol 7-2-3      |
| 100                        |            | Amizo                        |
|                            |            | Ecology Controls M-Binder    |
| Step 2:                    |            |                              |
| Lbs/Acre                   | Kg/Hectare | Hydroseed Mix Summary        |
| 2,000                      | 2,250      | Cellulose Fiber Mulch        |
| 100                        | 135        | Organic Binder               |

## 2.05 EQUIPMENT

- A. Hydro-seeding: Equipment used for application of slurry shall be a commercial-type Hydro-Seeder and have a built-in agitation system with an operation capacity sufficient to agitate, suspend and homogeneously mix slurry. Tank capacity shall be a minimum of 1,500 gallons and shall be mounted on a truck to allow access to the site.
- B. Distribution Lines: Large enough to prevent stoppage and allow for even distribution of slurry over the site.
1. Pump shall be able to generate 150 psi at the nozzle.
  2. Straw blowers: Equipment shall be specifically designed and manufactured for the application of straw. Equipment shall be of sufficient horsepower to break up and distribute straw at the

HYDRO-SEEDING

specified application rate.

## 2.06 WATER

Water will be furnished by District and will be made readily available at the sites indicated on the Drawings.

## PART 3 – EXECUTION

### 3.01 GENERAL

- A. Areas to receive erosion control treatments include all graded areas as shown on the site plan, and other areas as determined by the Engineer.
- B. Perform erosion control treatments on a section by section basis. On approval of the Engineer, and as soon as possible after grading, complete treatments in the following order of priority-stream zones, graded slopes, non-trafficked road and parking areas, building pads and other flat areas.
- C. Contractor shall be available to re-treat areas disturbed by on going activities.

### 3.02 SOIL PREPARATION

- A. Areas to be hydro-seeded shall be free of weed plants. All areas shall be roughened and worked to a minimum depth of 4 inches, then finish graded as directed by the Engineer. Surfaces shall be disced or otherwise worked to break all clods to 2-inches or smaller in size.
- B. Soil amendments shall be incorporated in the site as specified.

### 3.03 HYDROSEEDING AREA

- A. Do all slurry preparation at the job site:
  - 1. Water, mulch, fertilizer, compost, binder and other ingredients shall be added to the tank simultaneously so that the finished load is a homogenous mix of the specified ingredients.
  - 2. Seed shall be added last and shall be discharged within 2 hours. Loads held over 2 hours will be recharged with ½ the seed rate before application.
  - 3. Once fully loaded, the complete slurry shall be agitated for 3-5 minutes to allow for uniform mixing.
- B. Application:
  - 1. Apply specified slurry in a sweeping motion to form a uniform application and form a mat at applications of 1,600-lbs/acre or more.

2. Protection: Contractor is to stay off treated areas.
3. Unused Loads: If mixture remains in tank for more than 8 hours it shall be removed from the job site at Contractor's expense.
4. Reseeding: After "Final Acceptance," reseeding will be done at the request of the Engineer and shall be considered extra.
5. The Contractor shall hand water the hydro-seeded area if required by weather conditions and to ensure growth. Washed areas or erosion shall be repaired by restoring finished grades and re-seeding.

#### 3.04 CLEAN-UP

- A. Erosion control work areas shall be maintained in a neat and orderly condition. Keep paved area free of soil.
- B. Overspray: Installing Contractor is responsible for washing or otherwise cleaning excess material off all area not intended to receive treatment.
- C. Debris: Clean up and remove erosion control associated materials and debris from project site before Final Acceptance.

**END OF SECTION**

## **SECTION 03100**

### **CONCRETE FORMWORK**

#### **PART 1 – GENERAL**

##### **1.01 SECTION INCLUDES**

- A. Formwork for cast-in place concrete with shoring, bracing and anchorage
- B. Openings for other work
- C. Form accessories
- D. Form stripping

##### **1.02 REFERENCES**

- A. ACI 117 - Tolerances for concrete construction and materials
- B. PS-1 - Construction and Industrial Plywood
- C. Chapter 19A, California Building Code
- D. APA - American Plywood Association Design and Construction Guide
- E. Local AQMD - Air Quality Management District

##### **1.03 DESIGN REQUIREMENTS**

- A. Design, engineer and construct formwork, shoring and bracing to conform to Section 1906A, California Building Code. Resultant concrete to conform to required shape, line and dimension. Design of formwork is Contractor's responsibility.
- B. Foundation concrete may be placed directly into neat excavations, provided the foundation trench walls are stable as determined by the Engineer, subject to the approval of the ORS/DSA and Engineer. In such case, the minimum formwork indicated on the drawings is mandatory to insure clean excavations immediately prior to and during the placing of concrete.

##### **1.04 COORDINATION**

- A. Coordinate this Section with other Sections of work which require attachment of components to formwork.
- B. If formwork is placed after reinforcement resulting in insufficient concrete cover over reinforcement, request instructions from Engineer before proceeding.

##### **1.05 MEASUREMENT AND PAYMENT**

## **CONCRETE FORMWORK**

Separate measurement or payment will not be made for work required under this Section. All costs in connection therewith will be considered incidental to the item of work to which it pertains.

## **PART 2 – PRODUCTS**

### **2.01 FORM MATERIALS**

- A. Plywood: APA - Medium density overlay, Group 1, Exterior, PS-1, for exposed surfaces. APA Plyform B-B, Class 1, Exterior, PS-1 for unexposed surfaces.
- B. Tubular column forms: Fiber-reinforced, with plastic liner, seamless, by the Burke Co., San Mateo, CA, or Jefferson Smurfit Corp., St. Louis, MO, or approved equal.

### **2.02 FORMWORK ACCESSORIES**

- A. Form Release Agent: Colorless non-staining liquid chemical agent, free of wax or oils which will not absorb water. Material shall comply with AQMD, local Regulations.
- B. Corners: Chamfered type; maximum possible lengths.
- C. Nails, Spikes, Lag Bolts, Through Bolts, Anchorages: Sized as required, of sufficient strength and character to maintain formwork in place while placing concrete.

## **PART 3 – EXECUTION**

### **3.01 EXAMINATION**

Verify lines, levels and centers before proceeding with formwork. Ensure that dimensions agree with Drawings.

### **3.02 EARTH FORMS**

Hand trim sides and bottom of earth forms. Remove loose soil prior to placing concrete.

### **3.03 ERECTION - FORMWORK**

- A. Erect formwork, shoring and bracing to achieve design requirements in accordance with requirements of Section 1906A, California Building Code.
  - 1. Calculations Required: Provide all shoring required to protect all earth banks which cannot be sloped back, due to adjacent structures, walks, streets or property lines. Provide all engineering calculations and drawings necessary to perform the work.
  - 2. Where public areas such as sidewalks and streets are to be shored, the drawings and calculations are to be submitted by the Contractor to

the city or governing agency for approval prior to beginning of any work.

3. The Contractor assumes and accepts all responsibility for the construction and safety of the shoring.
4. Upon completion of the work, all shoring materials are to be removed from the site at the expense of the Contractor. Certain steel and/or concrete materials may be left in place with the written approval of the Engineer.

- B. Provide bracing to ensure stability of formwork. Shore or strengthen formwork subject to overstressing by construction loads.
- C. Arrange and assemble formwork to permit dismantling and stripping. Do not damage concrete during stripping. Permit removal of remaining principal shoring. Conform to Title 8, Subchapter 4, Construction Safety Orders, CCR.
- D. Align joints and make watertight. Keep form joints to a minimum.
- E. Obtain approval from Engineer before framing openings in structural members which are not indicated on Drawings.
- F. Provide chamfer strips on external corners.

#### 3.04 APPLICATION - FORM RELEASE AGENT

- A. Apply form release agent on formwork in accordance with manufacturer's recommendations.
- B. Apply prior to placement of reinforcing steel, anchoring devices and embedded items.
- C. Do not apply form release agent where concrete surfaces will receive special finishes or applied coverings which are affected by agent. Soak inside surfaces of untreated forms with clean water. Keep surfaces coated prior to placement of concrete.

#### 3.05 INSERTS, EMBEDDED PARTS AND OPENINGS

- A. Provide formed openings where required for items to be embedded in or passing through concrete work. No openings or embedded items permitted in structural slabs within 18 inches of columns. Conform to Section 1906A, California Building Code.
- B. Locate and set in place items which will be cast directly into concrete.
- C. Coordinate work of other Sections in forming and placing openings, slots, reglets, recesses, chases, sleeves, bolts, anchors and other inserts, whether indicated on the structural drawings or not.

- D. Install accessories in accordance with manufacturer's instructions, straight, level and plumb. Ensure items are not disturbed during concrete placement.
- E. Provide temporary ports or openings in formwork where required to facilitate cleaning and inspection. Locate openings at bottom of forms to allow flushing water to drain.
- F. Close temporary openings with tight fitting panels, flush with inside face of forms and neatly fitted so joints will not be apparent in exposed concrete surfaces.

### 3.06 FORM CLEANING

- A. Clean and remove foreign matter within forms as erection proceeds.
- B. Clean formed cavities of debris prior to placing concrete.
- C. Flush with water or use compressed air to remove remaining foreign matter. Ensure that water and debris drain to exterior through clean-out ports.

### 3.07 FORMWORK TOLERANCES

Construct formwork to maintain tolerances required by ACI 117.

### 3.08 FIELD QUALITY CONTROL

Inspect erected formwork, shoring, and bracing to ensure that work is in accordance with formwork design and that supports, fastenings, wedges, ties and items are secure.

### 3.09 FORM REMOVAL

- A. Do not remove forms or bracing until concrete has gained sufficient strength to carry its own weight and imposed loads. Conform to Section 1906A, California Building Code.
  - 1. Minimum stripping time for walls and columns: 5 days.
  - 2. Minimum stripping time for beams and structural slabs: 21 days.
- B. Loosen forms carefully. Do not wedge pry bars, hammers or tools against finish concrete surfaces scheduled for exposure to view. Do not break-off corners.
- C. Store removed forms in manner that surfaces to be in contact with fresh concrete will not be damaged. Discard damaged forms. Reshoring permitted only after 10 days and prior to stripping.

**END OF SECTION**

## **SECTION 03150**

### **CONCRETE ACCESSORIES**

#### **PART 1 – GENERAL**

##### **1.01 DESCRIPTION**

This section describes the requirements for furnishing and installing concrete accessories.

##### **1.02 RELATED SECTIONS**

- A. Section 02753 – CONCRETE FINISHES
- B. Section 03310 – CAST-IN-PLACE CONCRETE

##### **1.03 SUBMITTALS**

Submittals according to the Conditions of the Contract and of these Specifications, to include:

Submit manufacturer's descriptive and technical data, clearly marked to indicate product type, variations, and materials. Include manufacturer's printed installation instructions.

##### **1.04 MEASUREMENT AND PAYMENT**

Separate measurement or payment will not be made for work required under this Section. All costs in connection therewith will be considered incidental to the item of work to which it pertains.

#### **PART 2 – PRODUCTS**

##### **2.01 PIPE SLEEVES**

For Steel Fence Post and Gates: ASTM A53 Schedule 40 black pipe, of sizes indicated, with ¼-inch steel plate welded to bottom. Hot dip galvanize after fabrication in accordance with ASTM A123.

##### **2.02 EXPANSION AND CONTROL-JOINT FILLERS**

- A. Sealed Joints ASTM D1752 Type I, Type II or Type III. Free of bituminous materials and binders which could contaminate joint and of thicknesses to suit joint widths.
- B. Exposed Filler Joints: ASTM D1751 asphaltic-compound strips of thickness to suit joint widths.
- C. Sealant as shown on drawings.

##### **2.03 PREFORMED COLD JOINTS**

### **CONCRETE ACCESSORIES**



At slabs on Grade: Standard 24-gauge galvanized steel, keyed profile, sized to suit slab thickness.

## 2.04 WATERSTOPS

### A. For use with Thermoplastic Sheet Waterproofing:

1. Product: Greenstreak, Inc., "Base Seal Profile, Style 771," 9-inches wide by 5/32-inch thick, unless otherwise indicated or recommended in writing by the waterproofing manufacturer, or approved equal.
2. Material: Fabricate waterstops from an elastomeric plastic compound of which the basic resin is prime virgin polyvinyl chloride (PVC); no reclaimed, scrap, or reprocessed PVC shall be used. Plastic compound shall contain additional resins, plasticizers, inhibitors, or other materials such that compound material shall comply with U.S. Corps of Engineers Specification CRD-C572.
3. Fabrication:
  - a. Fabricate waterstops to ensure a minimum of field splices.
  - b. In addition to straight sections, furnish factory-made fabrications for changes of direction, intersections, and transitions insofar as practicable.

### B. Strip Waterstops: Flexible strip of bentonite and butyl rubber compound for use in concrete construction joints and not designed for expansion joints, rectangular shape, furnished in coils, CETCO "Volclay Waterstop RX 101," or approved equal. Furnish with adhesive as recommended by the manufacturer.

## PART 3 – EXECUTION

### 3.01 INSPECTION

Verify that conditions are satisfactory for the installation of concrete accessories. If unsatisfactory conditions exist, do not commence the installation until such conditions have been corrected.

### 3.02 INSTALLATION

#### A. General:

1. Install concrete accessories in compliance with the manufacturer's printed installation instructions, accepted Shop Drawings, and as specified.
2. Securely fasten concrete accessories in place prior to placement of concrete.

#### B. Exposed Filler Joints:

1. Install filler material so that top surface is level and uniformly aligned  $\frac{1}{4}$  - inch below adjacent concrete surface.
  2. Provide where walks abut vertical surfaces, at not over 24-foot-centers horizontally in paving, and at other locations indicated.
  3. Lay out in pattern indicated; if not indicated, verify locations with Engineer before proceeding with installation.
- C. Sealed Joints: Provide filler material of proper width, depth, and position to produce sealant dimensions indicated.
- D. Preformed Cold Joints:
1. Install cold joints as indicated. Confirm locations with Engineer prior to placement of concrete.
  2. Set joints with a minimum of five steel stakes per 10-foot length of joint. Set stakes with tops a minimum of  $\frac{3}{8}$ -inch below the surface of the concrete.
- E. Waterstops:
1. PVC Waterstops:
    - a. Install waterstops as indicated and so waterstops are continuous around and at intersecting construction joints. No waterstops shall be terminated below the ground-water table plus 10-feet, unless otherwise indicated.
    - b. Heat fuse weld and test joints in compliance with the manufacturer's printed instructions using tools and methods required by the manufacturer. Welded joints shall provide bond at least equal to the strength of the waterstop section. Jointing other than heat fusion welding shall not be permitted.
    - c. Penetrations through waterstops will not be permitted.
  2. Strip Waterstops
    - a. Remove dirt coatings, rocks, and debris from surface to receive waterstops. Ensure that concrete is free of large voids and projections. Verify minimum concrete coverage will be maintained over entire placement of waterstops.
    - b. Apply adhesive at a manufacturer's recommended rate of application and allow to cure as required. Reapply adhesive to areas where the waterstop has not been installed within 4 hours of adhesive application, unless otherwise recommended in writing by the manufacturer.

- c. Remove release paper from waterstop and firmly press waterstops against the adhesive in locations indicated. Place waterstops in maximum practicable lengths to minimize end joints. Tightly butt ends together, do not overlap ends.
- d. Until waterproofing is concealed, re-inspect periodically as adjacent Work progresses to ensure that complete and effective waterstop system is provided.

### 3.03 FIELD QUALITY CONTROL

Testing Laboratory Services: Testing Laboratory shall be at the Project Site full-time during the installation of waterstop materials. Upon successful completion of the installation the Testing Laboratory shall submit written certification to the District and Engineer that materials and their installation are in compliance with the requirements of the Contract Documents.

### 3.04 PROTECTION

Protect concrete accessories from damage and deterioration until time of completion and acceptance by the Engineer.

**END OF SECTION**

## **SECTION 03200**

### **CONCRETE REINFORCEMENT**

#### **PART 1 – GENERAL**

##### **1.01 SECTION INCLUDES**

Reinforcing steel bars and accessories for cast-in-place concrete

##### **1.02 REFERENCES**

- A. ACI 315 - Details and Detailing of Concrete Reinforcing
- B. ACI 318 - Building Code Requirements for Reinforced Concrete
- C. ASTM A615 - Specification for Deformed and Plain Billet-Steel Bars for Concrete Reinforcement
- D. ASTM A706 - Specification for Low-Alloy Steel Deformed Bars for Concrete Reinforcement
- E. AWS D1.4 - Structural Welding Code for Reinforcing Steel
- F. CRSI - Concrete Reinforcing Steel Institute Manual of Practice
- G. Chapter 19, California Building Code

##### **1.03 SUBMITTALS**

Submit Shop Drawings to Engineer: Indicate bar sizes, spacings, locations and quantities of reinforcing steel bending and cutting schedules and supporting and spacing devices.

##### **1.04 QUALITY ASSURANCE**

Provide Testing Laboratory with access to fabrication plant to facilitate inspection of reinforcement. Provide notification of commencement and duration of shop fabrication in sufficient time to allow inspection.

##### **1.05 COORDINATION**

Coordinate with placement of formwork, formed openings and other work.

##### **1.06 MEASUREMENT AND PAYMENT**

Separate measurement or payment will not be made for work required under this Section. All costs in connection therewith will be considered incidental to the item of work to which it pertains.

### **CONCRETE REINFORCEMENT**

## **PART 2 – PRODUCTS**

### **2.01 REINFORCEMENT**

- A. Reinforcing Steel: ASTM A615, 60 yield grade deformed billet steel for No. 4 bars or larger; 40 yield grade, No. 3 bars for ties and stirrups. Conform to Section 1903, California Building Code. All bars to be welded: ASTM A706, 60 yield grade.
- B. Welding Electrodes: Low Hydrogen grade E70XX for Grade 40, E90XX for Grade 60.

### **2.02 ACCESSORY MATERIALS**

- A. Tie Wire: Minimum 16 gage black annealed type.
- B. Chairs, Bolsters, Bar Supports, Spacers: Sized and shaped for strength and support of reinforcement during concrete placement conditions.
- C. Special Chairs, Bolsters, Bar Supports and Spacers adjacent to Weather Exposed Concrete Surfaces: Plastic coated steel type; size and shape as required.
- D. Concrete Blocks: Approximately 3 inches dimension each side.

### **2.03 FABRICATION**

- A. Fabricate concrete reinforcing in accordance with CRSI Manual of Practice and ACI 315 and ACI 318. Wherever possible, make bends to shape in fabricator's shop.
  - 1. Bars reduced in section will not be accepted.
  - 2. Bars with kinks are unacceptable.
  - 3. Bars shall not be heated to facilitate bending or for any other purpose.
  - 4. Bars with bends not indicated on drawings will not be accepted. Perform no forming in a manner which will damage bars.
- B. Weld reinforcement in accordance with AWS D1.4.
- C. Locate reinforcing splices not indicated on Drawings at point of minimum stress.

## **PART 3 – EXECUTION**

### **3.01 PLACEMENT**

- A. Place, support and secure reinforcement against displacement. Do not deviate from required position. Install concrete blocks to support reinforcement over grade. Smooth face rocks not permitted.
- B. Do not displace or damage vapor barrier where vapor barrier is specified or indicated on drawings.
- C. Accommodate placement of formed openings.
- D. Prior to placing, thoroughly clean reinforcement of all rust, dirt, dust, oil or any other material deleterious to bonding of concrete.
- E. Accurately place and securely tie reinforcement at all intersections and splices with black annealed wire and securely hold in position during placing of concrete by means of precast concrete block supports. Point wire tie ends away from the form. Unless otherwise indicated, the number, type, and spacing of supports shall conform to the ACI 315.
- F. During placing of structural concrete slabs, provide a full-time reinforcing steel placer to repair and replace reinforcing to its proper location. Provide additional chairs of the proper size available to place under bars displaced during the concrete pouring operation.
- G. Dowels for Walls: Securely tie in place prior to placing of concrete. Do not place dowels in concrete after pour.
- H. Conform to Section 1907A, California Building Code for concrete cover over reinforcement.

**END OF SECTION**

## **SECTION 03310**

### **CAST-IN-PLACE CONCRETE**

#### **PART 1 – GENERAL**

##### **1.01 SECTION INCLUDES**

- A. Cast-in-place concrete
- B. Floors and slabs on grade
- C. Control, expansion and contraction joint devices associated with concrete work including joint sealants
- D. Concrete fill for steel pan stairs
- E. Under slab termite control

##### **1.02 REFERENCES**

- A. ACI 301 - Structural Concrete for Buildings
- B. ACI 318 - Building Code Requirements for Reinforced Concrete
- C. ASTM C33 - Concrete Aggregate
- D. ASTM C150 - Portland Cement
- E. ASTM C171 - Sheet Materials for Curing Concrete
- F. ASTM C330 - Lightweight Aggregates for Structural Concrete
- G. ASTM C1107 - Packaged Dry, Hydraulic - Cement Grout (Non-Shrink)
- H. ASTM D1751 - Preformed Expansion Joint Filler for Concrete (Bituminous Type)
- I. Chapter 19A, California Building Code
- J. UBC Standard No. 19-1 - Portland Cement and Blended Hydraulic Cements
- K. UBC Standard No. 19-4 - Concrete made by Volumetric Batching and Continuous Mixing

##### **1.03 SUBMITTALS**

- A. Placement Schedule: Submit for approval to Engineer details and/or sketches showing location of each proposed construction joint. Do not deviate from locations of horizontal joints indicated on the Drawings.

- B. Submit product data for each type of manufactured material and product included.
- C. Submit design mix for each concrete mix.
- D. Submit steel reinforcement shop drawings, including material, grade bar schedules, spacing, bent bar diagrams, arrangement and supports.

#### 1.04 PROJECT RECORD DOCUMENTS

- A. Accurately record actual locations of embedded utilities and components which are concealed from view.
- B. Maintain an accurate record showing date and time of concrete placement in each portion of structure. Correlate placing record for test cylinders made by testing laboratory. Maintain a separate record giving date of removal of forms, shoring, including first and second halves and reshoring, if used. Keep records available for inspection at site. Upon completion, deliver two copies of each to Engineer in approved form.

#### 1.05 QUALITY ASSURANCE

- A. Perform Work in accordance with Section 1905A, California Building Code, and ACI 318.
- B. Maintain one copy of all records.
- C. Acquire cement and aggregate from same source for all work.
- D. Conform to Section 1905A, California Building Code, when concreting during hot weather. No concrete placement permitted above 90 degrees Fahrenheit.
- E. Conform to Section 1905A, California Building Code, when concreting during cold weather. No concrete placement permitted below 50 degrees Fahrenheit.

#### 1.06 COORDINATION

Coordinate the placement of joint devices with erection of concrete formwork and placement of form accessories.

#### 1.07 MEASUREMENT AND PAYMENT

Full compensation for furnishing all labor including grading, rebar, base rock, materials, tools, equipment, and incidentals and for doing all work required for concrete walkway and stairs as shown on the Drawings and as specified in these Specifications and will be measured for payment by the square foot to the limits indicated on the plans, and will be paid for at the contract unit price per square foot for CONCRETE WALKWAY AND STEPS, Bid Item No. 36.

### **PART 2 – PRODUCTS**

#### 2.01 CONCRETE MATERIALS

#### CAST-IN-PLACE CONCRETE



- A. Cement: ASTM C150, Type I or II. Portland Type, conforming to Section 1903A, California Building Code and UBC Standard No. 19-1.
- B. Aggregate Base: Aggregate base shall be Class II and shall conform to the requirements of Section 26 of the State of California (Caltrans) Standard Specifications.
- C. Conform to requirements specified herein for maximum size of aggregate permitted in individual applications.
- D. Water: Clean and not detrimental to concrete from domestic source.

## 2.02 ACCESSORIES

- A. Bonding Agent: Polyvinyl Acetate Latex emulsion; HIBOND, manufactured by Lambert Corporation, Orlando FL, LOCK BOND NO. 906, manufactured by Macklanburg-Duncan Co., City of Industry, CA, or approved equal.
- B. Curing Film: ASTM C171; 4 mil thick, clear polyethylene film, single sheet, manufactured from virgin resin with no scrap or additives, free of visible defects, uniform in appearance, conforming to the following:
  - 1. Moisture Loss: 0.055 g per sq. cm.
  - 2. Tensile Strength: 1700 psi longitudinal, 1200 psi transverse.
  - 3. Elongation: 225 percent longitudinal, 350 percent transverse.
- C. Non-Shrink Grout: Premixed compound consisting of non-metallic aggregate, cement, water reducing and plasticizing agents; capable of developing minimum compressive strength of 5,000 psi in 24 hours and 8,000 psi in 7 days; of consistency for application and a 30 minute working time.
- D. Reinforced Vapor Barrier: Griffolyn Vaporguard as manufactured by Reef Industries, Inc., Houston, TX, or approved equal.

## 2.03 JOINT DEVICES AND FILLER MATERIALS

- A. Expansion Joint Filler: ASTM D1751; Closed cell, bituminous saturated fiberboard; 1/2 inch thick, FIBER EXPANSION JOINT manufactured by The Burke Company, or approved equal.
- B. Expansion Joint Top: Integral extruded polystyrene plastic; 1/2 inch thick, with removable top strip exposing sealant trough, JOINT CAPS manufactured by The Burke Company, or approved equal.
- C. Sealant: Polyurethane multi-component type, non-sagging or self leveling at flatwork.
- D. Primer: As recommended by sealant manufacturer.

- E. Saw-Cut Joint Filler: Two-component epoxy resin, gray color, non-hardening, self-leveling, SIKADUR 51 (SL), by Sikacorp, Lyndhurst, NJ, or approved equal.

## 2.04 CONCRETE MIX

- A. Mix and deliver concrete in accordance with Section 1905A, California Building Code and UBC Standard No. 19-4. Deliver concrete in transit mixers only. Discharge loads in less than 1-1/2 hours after water is first added.
1. Design Mix: Method B, by an approved Testing Laboratory, certified by a registered Professional Engineer licensed in California.
  2. Do not exceed 0.45 water-cement ratio by weight for floor slabs and 0.49 for other concrete.
- B. Select proportions for concrete in accordance with the approved design mix.
1. Required Strength: As noted on the structural drawings and below.
  2. Grout Mix: 1:3:2 Portland Cement to pea gravel, to sand, minimum 3000 psi at 28 days.
  3. Fill for Steel Pan Stairs: Same as grout mix, except add minimum amount of water to provide a low slump mix. Minimum 28 day strength: 2,000 psi. Install ASTM A185 6 x 6 - W1.4 x W1.4 welded wire reinforcing at landing pans and install in tread pans KEYDECK mesh as manufactured by Keystone Steel and Wire Peoria, IL., or approved equal.
- C. Provide concrete to the following criteria:

| Element                           | Min 28 day<br>Strength PSI | Max<br>Slump | Max Size<br>Aggregate | Type    |
|-----------------------------------|----------------------------|--------------|-----------------------|---------|
| Grade Beams<br>and<br>Foundations | 3,000                      | 4 inch       | 1-1/2 inch            | Regular |
| Fir. Slabs<br>on grade            | 3,000                      | 4 inch       | 1 inch                | Regular |

- D. Do not use admixtures containing chlorides for floor slabs.

## PART 3 – EXECUTION

### 3.01 EXAMINATION AND TESTING

- A. Verify site conditions.

- B. Verify requirements for concrete cover over reinforcement.
- C. Verify that anchors, seats, plates, reinforcement and other items to be cast into concrete are accurately placed, positioned securely and will not cause hardship in placing concrete.
- D. Testing of the compressive strength of concrete in accordance with State Standards (Caltrans).

### 3.02 PREPARATION

- A. Prepare previously placed concrete by cleaning with sandblasting to remove laitance and expose clean aggregate.
- B. In locations where new concrete is doweled to existing work, drill holes in existing concrete, insert steel dowels and pack solid with non-shrink grout.
- C. When approved by the Engineer, clean previously placed concrete with steel brush and apply bonding agent in accordance with manufacturer's instructions.
- D. Under interior slabs on grade, install 4 inch thick crushed rock capillary break, provide 2 inches thick sand cushion and place vapor barrier, protect vapor barrier with an additional 2 inches of sand prior to slab placement. Seal all penetrations of vapor barrier and joints as recommended by manufacturer.

### 3.03 PLACING CONCRETE

- A. Place concrete in accordance with Section 1905A, California Building Code. Remove loose dirt from excavations.
- B. Notify Engineer minimum 24 hours prior to commencement of operations. All excavations, forms and reinforcing shall be inspected and approved by the Engineer prior to placement.
- C. Ensure reinforcement, inserts, embedded parts, formed joint fillers, joint devices and accessories are not disturbed during concrete placement.
- D. Install joint fillers, primer and sealant in accordance with manufacturer's instructions.
- E. When detailed on the drawings, separate slabs on grade from vertical surfaces with 1/2 inch thick joint filler.
- F. Extend joint filler from bottom of slab to within 1/2 inch of finished slab surface using two-component polyurethane sealant.
- G. Install joint devices in accordance with manufacturer's instructions as detailed.
- H. Install construction joint device in coordination with floor slab pattern placement sequence. Set top to required elevations. Secure to resist movement by wet concrete.

## CAST-IN-PLACE CONCRETE

- I. Maintain joint device in correct position to allow joint cover flush with finish.
- J. Install joint covers in longest practical length.
- K. Place concrete continuously between predetermined expansion, control and construction joints.
- L. Do not interrupt successive placement; do not permit cold joints to occur.
- M. Avoid segregation of materials. Perform tamping and vibrating so as to produce a dense, smooth application free of rock pockets and voids. Do not use vibrators to move concrete horizontally.
- N. Provide special mix prepared by the Testing Laboratory and approved by the Architect utilizing smaller aggregates in areas of reinforcing congestion to prevent the formation of rock pockets.
- O. Do not allow concrete to fall free from any height which will cause materials to segregate. Maximum height of free fall permitted in any case: 5 feet. Utilize trunks or additional chutes where doubt occurs.
- P. Construction Joints: Wash surface of each joint shortly after pouring to expose clean, sound aggregate. Sand blast surface to remove laitance remaining or loose aggregate as approved by the Engineer. Conform to Section 1906A, California Building Code.
- Q. Screed floors and slabs on grade level, maintaining surface flatness of maximum 1/8 inch in 10 ft. Slope floors for drains.
- R. Saw-cut slabs as approved by the Engineer at 20 ft oc, maximum 400 s.f., within 24 hours after placing, with 3/16 inch thick blade. Cut no deeper than 1/4 depth of slab thickness. Fill cuts with specified non-hardening epoxy. Completely fill cuts to surface of slab.

#### 3.04 SEPARATE FLOOR TOPPINGS

- A. Prior to placing floor topping, roughen substrate concrete surface and remove deleterious material. Broom and vacuum clean.
- B. Place required dividers, edge strips, reinforcing and other items to be cast in.
- C. Apply bonding agent to substrate in accordance with manufacturer's instructions.
- D. Place concrete floor toppings to required lines and levels. Place topping in checkerboard panels, maximum dimension not to exceed 20 ft.
- E. Screed toppings level, maintaining surface flatness of maximum 1/8 inch in 10 feet.

#### 3.05 CONCRETE FINISHING

- A. Provide formed concrete surfaces to be left exposed with smooth rubbed finish.
- B. Finish concrete floor surfaces to requirements of Section 02753.

### 3.06 CURING AND PROTECTION

- A. Immediately after placement, protect concrete from premature drying, excessively hot or cold temperatures and mechanical injury.
- B. Maintain concrete with minimal moisture loss at above 50 degrees F temperature for period necessary for hydration of cement and hardening of concrete. Dusting with dry cement to absorb excess water is prohibited.
- C. Cure floor surfaces only as specified herein and in accordance with Section 1905A, California Building Code. Membrane curing compound method not permitted for interior cast-in-place concrete slabs.
- D. Moisture Cure: Keep surface of floor slabs moist. Spray water over floor slab areas and maintain wet for minimum of seven (7) days or spread polyethylene film over floor slab areas, lapping edges and sides, minimum 6 inches and sealing with pressure sensitive tape; cover with plywood or otherwise protect film from damage; maintain in place for minimum of seven (7) days. Do not permit traffic over floor slabs during the seven (7) day curing period.
- E. Vertical Surfaces: Spray water over surfaces and maintain wet for 10 days.
- F. Quality Control: Proper curing of concrete surfaces shall be the responsibility of the Contractor under this section.

### 3.07 FIELD QUALITY CONTROL

- A. Provide free access to Work and cooperate with Testing Laboratory.
- B. Proposed mix design of each class of concrete shall conform to Section 1905A, California Building Code and shall be approved by the Engineer prior to commencement of work.

### 3.08 PATCHING

- A. Engineer will inspect concrete surfaces and determine imperfections, if any.
- B. Patch imperfections as approved and in accordance with ACI 301.
  - 1. Clean all exposed concrete surfaces and all adjoining work stained by leakage of concrete. Remove all fins, butts and projections by grinding. Patch voids, rock pockets, holes, cracks and similar imperfections by chipping loose concrete and exposing clean, sound aggregate.

2. Fill cone form tie recesses with portland cement mortar flush to finish surface.

### 3.09 DEFECTIVE CONCRETE

- A. Defective Concrete: Remove concrete not conforming to required lines, details, dimensions, tolerances or specified requirements.
- B. Repair or replacement of defective concrete will be determined by the Engineer.
- C. Do not patch, fill, touch-up, repair or replace exposed concrete except upon express approval of Engineer for each individual area.

### 3.10 MOISTURE TEST FOR CONCRETE FLOORS

- A. It shall be the Contractor's responsibility to provide a concrete floor slab meeting the maximum moisture vapor emissions herein specified and the Contractor shall exercise care in all aspects of mixing, placing, and curing the concrete floor slabs so that a minimum of mitigation treatment will be required.
- B. Prior to ordering floor materials that are adhesive applied, contractor shall conduct Calcium-Chloride "Dome" tests to verify that concrete floor slabs are dry with maximum moisture vapor emissions of three lbs. per 1,000 s.f. in 24 hours and that slabs exhibit negative alkalinity, carbonization or dusting. Apply the moisture test in four (4) different areas of each floor location, with at least one test for each 1,000 s.f. of floor area.
- C. Should the moisture emissions exceed three lbs. per 1,000 s.f. in 24 hours as specified here-in at the time of installation of adhesive applied floor coverings, and the Petrographic Analysis, ASTM C856, confirms that the placement of concrete slabs was not in conformance with requirements of this section and that the water cement ratio exceeded 0.45 or the concrete was cured less than 7 days, the Contractor, at no additional cost to the Engineer, shall reduce the moisture emission level to that specified by use of a vapor emission treatment system as approved by the Engineer.

**END OF SECTION**

**SECTION 03390**  
**CONCRETE CURING**

**PART 1 – GENERAL**

1.01 SECTION INCLUDES

Initial and final curing of horizontal and vertical concrete surfaces, excluding site work concrete

1.02 REFERENCES

- A. ACI 301 - Structural Concrete for Buildings
- B. ASTM C171 - Sheet Materials for Curing Concrete

1.03 QUALITY ASSURANCE

Perform Work in accordance with ACI 301. Proper curing of concrete shall be the Contractor's responsibility. Improperly cured concrete in the opinion of the Engineer shall be removed and replaced at no extra cost to the Engineer.

1.04 DELIVERY, STORAGE, AND HANDLING

Deliver, store, protect and handle sheet film materials to avoid puncturing or damage of any kind.

1.05 MEASUREMENT AND PAYMENT

Separate measurement or payment will not be made for work required under this Section. All costs in connection therewith will be considered incidental to the item of work to which it pertains.

**PART 2 – PRODUCTS**

2.01 MATERIALS

- A. Polyethylene Film ASTM C171; 8 mil thick, clear, manufactured from virgin resin with no scrap or additives. POLYETHYLENE, No. 227, manufactured by The Burke Co., San Mateo, CA, or approved equal.
- B. Water: Potable and not detrimental to concrete.

**PART 3 – EXECUTION**

3.01 EXAMINATION

- A. Verify substrate conditions.
- B. Verify that substrate surfaces are ready to be cured.

### 3.02 HORIZONTAL SURFACES

- A. Cure floor surfaces only as specified herein. Membrane curing compound method not permitted for interior cast-in-place concrete slabs.
- B. Spraying: Spray water over floor slab areas and maintain wet for 10 days.
- C. Polyethylene Film: Spread polyethylene film over floor slab areas, lapping edges and sides, minimum 6 inches and sealing with pressure sensitive tape; cover with plywood or otherwise protect film from damage; maintain in place for 10 days.

### 3.03 VERTICAL SURFACES

Spraying: Spray water over surfaces and maintain wet for 10 days.

### 3.04 PROTECTION OF FINISHED WORK

- A. Protect finished Work from damage caused by the work of other sections.
- B. Do not permit traffic over unprotected floor surface.

**END OF SECTION**



## **SECTION 04060**

### **MORTAR and GROUT**

#### **PART 1 – GENERAL**

##### **1.01 SECTION INCLUDES**

Mortar and grout for masonry

##### **1.02 REFERENCES**

- A. ASTM C150 - Portland Cement
- B. ASTM C207 - Hydrated Lime for Masonry Purposes
- C. ASTM C476 - Grout for Reinforced and Non-Reinforced Masonry
- D. UBC Standard No. 21-15 - Mortar for Unit Masonry other than Gypsum
- E. UBC Standard No. 21-16 Field Test Specimens for Mortar
- F. UBC Standard No. 19-1 - Portland Cement and Blended Hydraulic Cements
- G. ASTM C494 - Chemical Admixtures for Concrete
- H. Chapter 21A, CBC

##### **1.03 SUBMITTALS**

- A. Submit product data to Engineer including design mix, method used, required environmental conditions and admixture limitations.
- B. Submit samples to Engineer to include two ribbons of mortar color, illustrating color and color range.
- C. Submit manufacturer's certificate to Engineer that products meet or exceed specified requirements.

##### **1.04 DELIVERY, STORAGE AND HANDLING**

- A. Store and protect products.
- B. Maintain packaged materials clean, dry and protected against dampness, freezing and foreign matter.

##### **1.05 ENVIRONMENTAL REQUIREMENTS**

Maintain materials and surrounding air temperatures to minimum 40 degrees F prior to, during and 48 hours after completion of masonry work.

##### **1.06 MIX TESTS**

Test mortar and grout in accordance with these Specifications.

#### 1.07 MEASUREMENT AND PAYMENT

Separate measurement or payment will not be made for work required under this Section. All costs in connection therewith will be considered incidental to the item of work to which it pertains.

### **PART 2 – PRODUCTS**

#### 2.01 MATERIALS

- A. Portland Cement: ASTM C150, Type I, II or Type I-A, II-A air entraining as set forth in UBC Standard No. 19-1, Part I
- B. Mortar Aggregate: Section 2102.2.1.2, CBC
- C. Hydrated Lime: ASTM C207, Type S
- D. Grout Aggregate: Section 2102.2.1.2, CBC
- E. Water: Clean and potable
- F. Bonding Agent:
  - 1. WELD-CRETE; Larsen Products Corp., Rockville, MD.
  - 2. SONOCRETE; Sonneborn Building Products, Hayward, CA.
  - 3. THOROBOND; Thoro System Products, Newark, CA.
  - 4. Or approved equal.
- G. Admixture: ASTM C494, water-reducing, at high lift grouting only, Sika Grout and Type I for Brick and Type II for CMU shall be provided.

#### 2.02 MORTAR COLOR

- A. Mortar Color: Pure mineral oxide pigment; color as selected by the Engineer.  
TRUE TONE; Davis Colors, Los Angeles, CA, or approved equal.
- B. Color Intensity: Up to 4 lbs. per sack of masonry cement.

#### 2.03 MORTAR MIXES

- A. Mortar: One part portland cement, loose damp sand in the amount of not less than 2-1/4 and not more than three times the sum of the separate volumes of cementitious materials and 1/4 to 1/2 part lime. Mortar strength: 1500 psi minimum at 28 days and conform to Section 2103, CBC and UBC Standard No. 21-15.

- B. Mortar Type: Conform to Table 21A-A, California Building Code for Type S mortar.

#### 2.04 MORTAR MIXING

- A. Thoroughly mix mortar ingredients in quantities needed for immediate use. No admixtures permitted. Add lime last, in accordance with Section 2103A and Table 21A-B, California Building Code.
- B. Add mortar color in accordance with manufacturer's instructions. Provide uniformity of mix and coloration. Omit mortar color where surfaces are scheduled to receive plaster or paint.
- C. Do not use anti-freeze compounds to lower the freezing point of mortar.
- D. If water is lost by evaporation, retemper by fully mixing with required volume of water, only within one hour of mixing. Dashing or pouring water over mixture not permitted.
- E. Use mortar within two hours after mixing at temperatures of 80 degrees F or two-and-one-half hours at temperatures under 50 degrees F.

#### 2.05 GROUT MIXES

Fine Grout: One part portland cement, loose damp sand in the amount of 2-1/4 to three times the sum of the volumes of the cementitious materials and 1/10 part hydrated lime. Sufficient water shall be added to grout to cause it to flow into all joints of the masonry.

Coarse Grout: One part portland cement, 2-1/4 to three parts sand, 1 to 2 parts pea gravel, 0 to 1/10 part lime. Grout Strength: 2000 psi minimum at 28 days, and conform to Section 2103A, California Building Code.

#### 2.06 GROUT MIXING

- A. Thoroughly mix grout ingredients in quantities needed for immediate use in accordance with ASTM C476.
- B. Do not use anti-freeze compounds to lower the freezing point of grout.

#### 2.07 CALIBRATING

Proportion mortar and grout mixes by accurate volume measurements. Maintain at the site, calibrated boxes or containers of such nature that quantities measured can be readily and accurately checked at any time (Proportion by shovel measure not permitted, in accordance with Section 2103A, California Building Code).

### PART 3 – EXECUTION

#### 3.01 TESTING AND INSPECTION

- A. Request inspection of spaces to be grouted (Masonry work shall be continuously inspected during laying and grouting by the Project Inspector in accordance with Section 2105A-7, California Building Code).
- B. Testing shall comply with UBC Standard No-21-15 and 21-16.

### 3.02 PREPARATION

- A. Apply bonding agent to existing surfaces.
- B. Plug cleanout holes to prevent leakage of grout materials. Brace masonry for wet grout pressure.

### 3.03 INSTALLATION

- A. Install mortar and grout in accordance with Section 2104A, California Building Code.
- B. Work grout into masonry cores and cavities to eliminate voids. Use coarse grout in cavities two inches wide or more and in all filled cell construction.
- C. Do not displace reinforcement while placing grout.
- D. Remove grout spaces of excess mortar.

### 3.04 CURING

When atmosphere is extremely dry, dampen the masonry surfaces with a light fog spray for three days during the curing period for the mortar. Use a nozzle regulated fog spray sufficiently to dampen but not of such quantities to cause water to flow down over masonry.

**END OF SECTION**

## **SECTION 04090**

### **MASONRY ACCESSORIES**

#### **PART 1 – GENERAL**

##### **1.01 DESCRIPTION**

This section describes the requirements for furnishing masonry accessories.

##### **1.02 RELATED SECTIONS**

- A. Section 04060 – MORTAR AND GROUT
- B. Section 04220 – CONCRETE MASONRY UNITS
- C. Section 04820 – REINFORCED UNIT MASONRY SYSTEM

##### **1.03 SUBMITTALS**

Submittals according to the Conditions of the Contract and of these Specifications, to include:

Product Data: Submit to Engineer manufacturer's printed descriptive and technical data clearly marked to indicate specific products, materials and finishes. Include manufacturer's printed installation instructions.

##### **1.04 PRODUCT DELIVERY, STORAGE, AND HANDLING**

- A. Masonry accessories that have been packaged by the manufacturer shall be delivered and stored in the original packaging until ready for installation in the Work.
- B. Masonry accessories shall be protected from damage, contact with the soil, and from accumulations of dirt and other foreign materials.
- C. Comply with manufacturer's additional requirements.

##### **1.05 MEASUREMENT AND PAYMENT**

Separate measurement or payment will not be made for work required under this Section. All costs in connection therewith will be considered incidental to the item of work to which it pertains.

#### **PART 2 – PRODUCTS**

##### **2.01 JOINT MATERIALS FOR CONCRETE MASONRY UNITS**

Control Joint Filler: Styrene-butadiene-styrene rubber of shape indicated, or other accepted type, with section capable of transmitting shear across joint and in compliance with ASTM D2000, designation 2AA710 or 2AA805805.

##### **2.02 FLASHINGS**

### **MASONRY ACCESSORIES**

- A. Flexible Flashing: Self-adhering, cold-applied, sheet composite barrier consisting of a 0.008-inch thick-density cross-laminated polyethylene film coated on one side with 0.032-inch layer of rubberized asphalt adhesive with a disposable silicone-treated release sheet; W.R. Grace "Perm-A-Barrier Wall Flashing", or accepted equal. Furnish in widths as required and with primer and mastic as recommended by the manufacturer to suit Project conditions.
- B. Metal Flashings: Aluminum-Zinc Alloy, Coated Steel Sheet, heavy gage as required.

#### 2.03 WEEPS

Product: UV-resistant plastic tubing, 3/8-inch outside diameter by 4-inches long; Hohmann & Barnard "341," Dur-O-Wal "D/A 1005", Heckmann "330," or approved equal.

#### 2.04 CAVITY DRAINAGE MATERIAL

Product: High density polyethylene, nylon, or recycled polyester strands woven into a 90 percent open mesh and designed to catch and permanently suspend mortar droppings in masonry cavity walls above level of through-wall flashing to keep weeps open; Hohmann & Barnard, Inc. "Mortar Net," Mortar Net USA, Ltd. "Mortar Net," or approved equal. Furnish in thickness to match width of masonry cavity.

#### 2.05 WATER REPELLENT COATINGS

Proprietary Acrylic Blend: With 127g/L VOC's or less. OKON W-2 WATER REPELLENT SEALER, OKAN, Inc., 4725 Leyden St., Unit A, Denver, CO 80216-3301 at Phone 303-377-7800 or 800-237-0565 or Facsimile 303-321-7880 or Internet Mail [info@okoninc.com](mailto:info@okoninc.com). Internet Web Site [www.okoninc.com](http://www.okoninc.com), or approved equal.

### **PART 3 – EXECUTION**

#### 3.01 PREPARATION

Masonry accessories shall be dry and clean of rust and other foreign materials at time of installation.

#### 3.02 INSTALLATION

Installation of masonry accessories is specified in Section 04220: Concrete Masonry Units, and Section 04820: Reinforced Unit Masonry System.

**END OF SECTION**

## **SECTION 04220**

### **CONCRETE MASONRY UNITS**

#### **PART 1 – GENERAL**

##### **1.01 DESCRIPTION**

- A. This SECTION describes the requirements for furnishing and installing structural hollow concrete masonry units (CMU).
- B. Installation of CMU is specified in Section 04820: Reinforced Unit Masonry System.

##### **1.02 RELATED SECTIONS**

- A. Section 02170 – ENVIRONMENTAL MANAGEMENT OF EXCAVATED MATERIALS
- B. Section 02315 – EXCAVATING, BACKFILLING, COMPACTING AND GRADING
- C. Division 3 – CONCRETE
- D. Section 04060 – MORTAR AND GROUT
- E. Section 04090 – MASONRY ACCESSORIES
- F. Section 04820 – REINFORCED UNIT MASONRY SYSTEM
- G. Section 05270 – MISCELLANEOUS METALS
- H. Section 07190 – WATER REPELLENTS
- I. Section 13126 – PREFABRICATED GUARD HOUSE

##### **1.03 QUALITY ASSURANCE**

- A. Source Limitations: Obtain exposed masonry units of uniform texture and color, or a uniform blend with the ranges accepted for these characteristics, from one manufacturer for each different product required for each continuous surface or visually related surfaces.
- B. Qualifications, CMU Manufacturer: Manufacturer of concrete masonry units requiring water repellent admixture shall be qualified in writing by the manufacturer of the water repellent admixture.
- C. Allowable Tolerances: Maximum deviation from indicated line or plane of installed concrete masonry units shall not exceed 1/8-inch in 10-feet in any direction.

### **CONCRETE MASONRY UNITS**

D. Regulatory Requirements:

1. Materials and installation shall be in compliance with requirements of CCR Title 24.
2. Where concrete masonry assemblies with fire-resistance ratings are indicated, provide materials and installations identical with those of applicable assemblies tested in accordance with ASTM E119 by fire testing laboratories acceptable to public authorities having jurisdiction.

E. Mock-Up:

1. Prior to installation, provide an area of curved CMU exterior wall as indicated on the Drawings.
2. Construct mockups using masons whose skills are typical to that to be used in the Work. Use typical units representing the full range of color and texture variation to be expected in the installation. Include typical mortar joints, expansion and control joints, finishes, and other required components.

1.04 SUBMITTALS

Submit according to the Conditions of the Contract and these Specifications, including:

A. Certification:

1. Prior to delivery of concrete masonry units to the Project Site, submit a letter from CMU manufacturer certifying that all such concrete masonry units delivered to the Project Site comply with requirements of this SECTION. Certification shall show results of tests made not more than 12 months prior to delivery of concrete masonry units to the jobsite; shall prove compliant with specified requirements; and shall certify that the mix design, yield per batch, and curing procedures for units delivered are equal to those submitted for the test.
2. Following installation, submit written certification from installer stating that only CMU manufactured with integral water repellent and only mortar with water repellent admixture have been installed in exterior locations.
3. Additional certifications required for CMU are specified in Section 04820.

- B. Submit not less than two full size samples of each type of masonry unit showing full range of color and texture to be expected in the installed Work.



- C. Submit shop drawings showing the curvature, jointing and accessories for the installation.

#### 1.05 PRODUCT DELIVERY, STORAGE, AND HANDLING

- A. Deliver, store, and handle concrete masonry units covered and protected from absorbing moisture, soiling, breaking, chipping, cracking, and other damage.
- B. Store masonry units raised-off the ground in a dry and protected location.
- C. Comply with additional requirements of the manufacturer.

#### 1.06 JOB CONDITIONS

- A. Environmental Requirements:
  - 1. Install concrete masonry units when temperature in area surrounding Work is 40 degrees Fahrenheit or above. Provide suitable means to heat materials, protect Work from cold, and ensure that mortar will harden without freezing. Maintain temperature of Work above 40 degrees Fahrenheit for a least 24 hours after installation.
  - 2. Where evaporation rates are high, protect placed masonry to prevent drying out during early hardening stages.

#### 1.07 MEASUREMENT AND PAYMENT

Separate measurement or payment will not be made for work required under this Section. All costs in connection therewith will be considered incidental to the item of work to which it pertains.

### PART 2 – PRODUCTS

#### 2.01 CONCRETE MASONRY UNITS

- A. General:
  - 1. Material: In compliance with ASTM C90 Lightweight class (weighing less than 105 pounds per cubic foot), except ASTM C90 paragraph 7.2 shall be changed from 20 feet to 5 feet.
  - 2. Types: Hollow, as specified.
  - 3. Water Repellency: Units for exterior locations shall be produced with Grace Construction Products "Dry-Block" liquid polymeric water-repellent admixture, or accepted equal, in compliance with the water repellent manufacturer's printed dosage recommendations and prior testing. Units with water repellent admixture shall have the following physical and performance properties:
    - a. Water Vapor Transmission: Passes, when tested in

#### CONCRETE MASONRY UNITS

accordance with ASTM E96.

- b. Water Permanence: Class E rating (excellent) when evaluated for wind-driven rain resistance in accordance with ASTM E514, with test period extended to 72 hours and using rating criteria in ASTM E514-74. Upon completion of test there shall be no visible water or leaks on the back of the test specimen.
- c. Compressive Strength of Masonry Prisms: When tested in accordance with ASTM C1314, not more than five percent decrease in compressive strength of prisms shall occur as a result of adding water repellent admixture when compared to units produced without such admixture.
- d. Dry Shrinkage: When tested in accordance with ASTM C426, not more than five percent increase in drying shrinkage of CMU as a result of adding water repellent admixture when compared to units produced without such admixture.
- e. Flexural Bond Strength: When tested in accordance with ASTM C1357, flexural bond strength shall be the same as units produced without such admixture.
- f. Grout Shear Bond Strength: Not more than five percent decrease in grout shear bond strength when tested in accordance with regulatory requirements.

**B. CMU:**

- 1. Product: Split-face, hollow units with ground texture on all exposed faces when installed, as manufactured by Basalite, or approved equal.
- 2. Compressive Strength: As specified in Section 04820.
- 3. Shapes: Manufacturer's standard, unless otherwise indicated. Provide unit shapes as required for openings, control joints, bond beams, lintels, and other location as indicated with a minimum of block cutting. Provide single or double open-end bond beam units for grouted masonry.
- 4. Unit Dimensions: Nominal 8-inches deep by 8-inches high by 16-inches long (actual 7-5/8 inches deep by 7-5/8 inches high by 15-5/8 inches long), unless indicated otherwise.
- 5. Color
  - a. Color 1: Where indicated on drawings - Basalite D225 Split Face, "Medium Grey," or approved equal.
  - b. Color 2: Contrasting band of color where indicated on

**CONCRETE MASONRY UNITS**

drawings - Basalite D345 Split Face, "Salmon," or approved equal.

## 2.02 MASONRY ACCESSORIES

- A. Masonry Joint Materials, Tie Anchors, Anchors, and Other Accessories: Specified in Section 04090: Masonry Accessories.
- B. Steel Lintels and Shelf Angles: Specified in Section 05270: Miscellaneous Metals.
- C. Masonry Cleaner: Masonry cleaner of type as recommended in writing by the CMU manufacturer for use on new masonry.

## 2.03 MORTAR

Specified in Section 04060: Mortar and Grout.

## 2.04 FLASHING

- A. Flexible flashing in conjunction with masonry Work is specified in Section 04090: Masonry Accessories.
- B. Metal flashings in conjunction with masonry Work is specified in Section 04090: Masonry Accessories.

## 2.05 OTHER MATERIALS

Provide other materials not specifically described but required for a complete and proper installation and repair of concrete masonry units, subject to Engineer's written acceptance.

# **PART 3 – EXECUTION**

## 3.01 INSPECTION

- A. Prior to installation, inspect masonry units for damage and compliance with specified standard. Discard damaged and non-complying units and remove from the Project Site.
- B. Verify that conditions are satisfactory for the installation of concrete masonry units. If unsatisfactory conditions exist, do not commence the installation until such conditions have been corrected.

## 3.02 PREPARATION

- A. Clean surfaces of concrete masonry units and adjoining surfaces free from dust, dirt, debris, oil, grease, and other foreign substances that would affect bond of mortar and grout.
- B. Lay out wall to establish accurate spacing of bond pattern and to ensure uniform joint widths. Arrange units in a manner that will result in a minimum

# **CONCRETE MASONRY UNITS**

amount of cutting of units.

- C. Perform cutting of units only with masonry power saws. Hand cutting and chipping will not be permitted.
- D. When used in the Work, masonry units may be damp but shall be free from excessive moisture that could adversely affect proper mortar bond.

### 3.03 CLEANUP

- A. As work progresses, remove excess and spattered mortar, effluent and other foreign materials from the concrete masonry units. Rake and point defective joints. Cut off mortar protrusions. Rake out joints to receive sealant. Remove mortar droppings.
- B. Clean and brush completed wall of concrete masonry units with masonry cleaner and flush with large quantities of clean water.
- C. Comply with printed recommendations of the manufacturer and NCMA.
- D. Leave surfaces ready to receive water repellent coating specified in Section 04090: Masonry Accessories.
- E. At completion of unit masonry Work remove excess masonry materials from the Project Site and legally dispose of off-Site.

### 3.04 REPAIRS

- A. Mortar Joints:
  - 1. Repair defective mortar joints in compliance with NCMA printed recommendations and as follows.
  - 2. Remove crack, soft, separate and otherwise defective mortar without damaging adjoining Work. Remove defective mortar until sound mortar is reached, but not more than 0.75-inch deep.
  - 3. Clean adjoining surfaces and apply bonding agent in compliance with the manufacturer's printed instructions.
  - 4. Thoroughly fill joint with pointing mortar, forcing and compacting mortar in layers not exceeding 0.25-inch. Allow each layer to become thumbprint hard before applying subsequent layers. Compact and tool final layer to match adjoining undamaged mortar joints.
  - 5. Allow repaired areas to cure for a period of at least one week and obtain Engineer's acceptance before application of other finishes.
  - 6. Upon completion of repairs, joints shall match shape, color, and texture of adjoining undamaged joints.

B. Concrete Masonry Units:

1. Removal and Replacement:

- a. Remove concrete masonry units that are loose, chipped, broken, stained, and/or otherwise damaged and units that do not match adjoining Work.
- b. Remove old mortar and clean and prepare bonding surfaces.
- c. Upon completion, new units shall match shape, color, and texture of adjoining undamaged units and shall be acceptable to the Engineer.
- d. Units with minor, non-structural cracks may be repaired as specified hereinafter.

2. Crack Repair:

a. Crack Type Determination:

- i. Determine if crack is static (non-moving) or dynamic (moving) by applying a small, thin patch of gypsum plaster over the crack and allowing it to dry in compliance with NCMA printed recommendations. Protect patch from water and other damage.
- ii. Monitor patch for at least consecutive 3 days and notify Engineer in writing of findings. Allow Engineer to inspect patch prior to removal. Remove plaster and clean surface when acceptable to the Engineer.
- iii. Additional testing may be performed by the Testing Laboratory.

b. Static Cracks:

- i. Cracks shall be measured over their entire length and the widest condition shall govern method of repair.
- ii. Cracks 0.02-inch wide or less.
  - Seal such cracks with water repellent material as specified in SECTION 04490 "MASONRY ACCESSORIES" if approved in writing by the water repellent manufacturer.
  - Match adjoining undamaged surfaces.
- iii. Cracks Over 0.02-inch wide to less than 0.06-inch wide.

- Comply with NCMA recommendations, and as specified.
  - Carefully remove sufficient material at area of crack to allow application of pointing mortar without damaging adjoining Work.
  - Clean adjoining surfaces and apply bonding agent in compliance with the manufacturer's printed instructions.
  - Thoroughly fill crack with pointing mortar. Compact and texture mortar to match adjoining surface.
  - Allow repaired area to cure for a period of at least seven days and obtain Engineer's acceptance before application of other finishes.
  - Upon completion, repaired areas shall be not visible when viewed from a distance 3-feet under diffused lighting.
  - If repairs are visible, remove unit face and provide new as specified hereinbefore for CMU removal and replacement.
- iv. Cracks 0.06-inch wide and wider:
- Crack repair will not be acceptable.
  - Carefully remove CMU containing such cracks without damaging adjoining Work.
  - Remove old mortar and clean and prepare bonding surfaces.
  - Upon completion, new faces shall match shape, color, and texture of adjoining undamaged units and shall be acceptable to the Engineer.
- c. Dynamic Cracks:
- i. Rout out sufficient material at area of crack to allow application of sealing materials.
  - ii. Clean adjoining surfaces and apply primer and joint sealant as specified by manufacturer. Color or sealant shall match color of adjoining surfaces, as acceptable to the Engineer. Joint sealant shall be sanded using ground CMU material, in compliance with sealant manufacturer's printed recommendations.

- iii. Upon completion, repaired areas shall be not visible when viewed from a distance 3-feet from the surface under diffused lighting.
- iv. If repairs are so visible, remove CMU units. Provide new Work as specified hereinbefore for CMU removal and replacement.

### 3.06 COMPLETION

- A. Upon completion, concrete masonry unit Work shall be plumb and level within specified tolerances, solidly set without movement.
- B. Exposed faces shall be clean, and free from breaks, cracks, chips, stains, and other defects and damage.

### 3.07 PROTECTION

Protect concrete unit masonry Work from damage and deterioration until time of completion and acceptance by the Engineer.

**END OF SECTION**

## **SECTION 04820**

### **REINFORCED UNIT MASONRY SYSTEM**

#### **PART 1 – GENERAL**

##### **1.01 DESCRIPTION**

This Section includes specifications for furnishing and installing reinforced concrete masonry system for Decorative CMU Walls and Ornamental Steel Fence pilasters. Also included in the Work are the landscape metal screen used for the trellises, and the foundations.

##### **1.02 SECTION INCLUDES**

- A. Concrete masonry units
- B. Reinforcement, anchorage and accessories

##### **1.03 RELATED SECTIONS**

- A. Section 02315 – EXCAVATING, BACKFILLING, COMPACTING AND GRADING
- B. Section 02823 – LANDSCAPE METAL SCREEN
- C. Section 02825 – ORNAMENTAL STEEL FENCE SYSTEM, INDUSTRIAL
- D. Division 3 – CONCRETE
- E. Section 04060 – MORTAR AND GROUT
- F. Section 04060 – MASONRY ACCESSORIES
- G. Section 04220 – CONCRETE MASONRY UNITS
- H. Section 05270 – MISCELLANEOUS METALS
- I. Section 05500 – METAL FABRICATIONS

##### **1.04 REFERENCES**

- A. ASTM A615 - Deformed and Plain Billet Steel Bars for Concrete Reinforcement
- B. ASTM D1751 - Preformed Expansion Joint Filler for Concrete Paving and Structural Construction (Nonextruding and Resilient Bituminous Types)
- C. UBC Standard 21-4 - Hollow and Solid Load Bearing Concrete Masonry Units



D. ASTM C90 - Hollow Load Bearing Concrete Masonry Units

E. Chapter 21A, California Building Code

#### 1.05 SUBMITTALS

A. Submit product data to Engineer.

B. Submit to Engineer three samples of concrete masonry units to illustrate color, texture and extremes of color range.

#### 1.06 QUALIFICATIONS

Installer: Company specializing in performing the work of this Section with minimum five years experience.

#### 1.07 MOCK-UP

A. Provide mock-up of concrete masonry in a location as approved by the Engineer.

B. Erect masonry to 3' x 4' panel size. Include specified mortar and accessories and one expansion joint.

C. When accepted, mock-up will demonstrate minimum standard for the work. Mock-up may remain as part of the work.

#### 1.08 PRE-INSTALLATION CONFERENCE

Convene two weeks prior to commencing work of this Section.

#### 1.09 DELIVERY, STORAGE AND HANDLING

Deliver products to site, store and protect materials from damage.

#### 1.10 ENVIRONMENTAL REQUIREMENTS

No masonry operations permitted when surrounding air temperature is 40 degrees F or lower.

#### 1.11 QUALITY ASSURANCE

Tests and Inspections as specified by Contract and of these Specifications.

#### 1.12 MEASUREMENT AND PAYMENT

This item to include full compensation for all labor, materials, tools, equipment and incidentals for doing all work involved in the Decorative CMU Wall, pilasters, landscape metal screen used as trellises on the wall and the foundation installation. This will be measured for payment by the linear foot to the limits indicated on the plans, and will be paid for at the contract unit price per linear foot, as part of the price bid for DECORATIVE CMU WALLS AND TRELLISES, Bid Item No. 29.

### REINFORCED UNIT MASONRY SYSTEM

Excavation, backfill, grading, compaction and subgrade, foundation and leveling pad preparation, drainage aggregate and pipe, and placement of geosynthetic reinforcement shall be incidental to this bid item.

## **PART 2 – PRODUCTS**

### **2.01 MANUFACTURERS**

- A. Products of the following manufacturers form the basis for design and quality intended.
  - 1. Angelus Block Co., Inc., Sun Valley, CA.
  - 2. Orco Block Co., Inc., Stanton, CA.
  - 3. Lindsay Concrete Products, Inc., San Bernardino, CA.
  - 4. Elliott Precision Block Co., San Bernardino, CA.
  - 5. Or approved equal.

### **2.02 CONCRETE MASONRY UNITS**

- A. Hollow Load Bearing Block Units: ASTM C90, UBC Standard No. 21-4, Grade N, type 1, medium weight, color as selected, smooth face both sides, minimum compressive strength 1500 psi.
- B. Masonry Units: Nominal modular size of 8 x 8 x 16 inches. Provide special units for 90 degree corners and special profiles as indicated.
- C. Provide units manufactured in one batch production to assure continuity of color.

### **2.03 REINFORCEMENT AND ANCHORAGE**

Reinforcing Steel: ASTM A615, 60 ksi yield grade, for No. 4 bars or larger, 40 KSI yield grade for No. 3 bars.

### **2.04 ACCESSORIES**

- A. Steel Wire Ties: Minimum 16 gage black annealed type.
- B. Expansion Joint Filler: ASTM D1751; close cell bituminous saturated fiberboard, 1/2 inch thick, FIBER EXPANSION JOINT manufactured by The Burke Co., San Mateo, CA. or approved equal.
- C. Sealant: Two component Polyurethane, Non-sag.
- D. Backer Rod: Closed cell polyethylene; oversized 50 percent to joint width; self-expanding; DENVER FOAM or GREEN ROD, manufactured by the Pecora Corp., Harleysville, PA, or approved equal.

## **REINFORCED UNIT MASONRY SYSTEM**

- E. Cleaning Solution: Not harmful to masonry work or adjacent materials.

### **PART 3 – EXECUTION**

#### **3.01 EXAMINATION**

- A. Verify that field conditions are acceptable and are ready to receive work.
- B. Verify items provided by other Sections of work are properly sized and located.
- C. Beginning of installation means installer accepts existing conditions.

#### **3.02 PREPARATION**

- A. Direct and coordinate placement of metal anchors.
- B. Provide temporary bracing during installation of masonry work. Maintain in place.
- C. Sandblast concrete foundation clean prior to installation of first masonry course.

#### **3.03 COURSING**

- A. Establish lines, levels and coursing indicated. Protect from displacement.
- B. Maintain masonry courses to uniform dimension. Form vertical and horizontal joints of uniform thickness.
- C. Lay concrete masonry units in running bond. Course one unit and one mortar joint to equal eight inches. Form concave mortar joints.

#### **3.04 PLACING AND BONDING**

- A. Lay hollow masonry units in full bed of mortar with full head joints, uniformly jointed with other work.
- B. Buttering corners of joints or excessive furrowing of mortar joints are not permitted.
- C. Remove excess mortar as work progresses.
- D. Interlock intersections and external corners.
- E. Do not shift or tap masonry units after mortar has achieved initial set. Where adjustment must be made, remove mortar and replace.
- F. Perform jobsite cutting of masonry units with proper tools to provide straight, clean, unchipped edges. Prevent broken masonry unit corners or edges.

### 3.05 REINFORCEMENT

Support and secure reinforcing bars from displacement. Maintain position within 1/2 inch of dimensioned position.

### 3.06 GROUTED COMPONENTS

- A. Lap splices in reinforcing steel minimum 50 bar diameters. Welded splices are required for No. 8 bars or larger.
- B. Support and secure reinforcing bars from displacement. Maintain position within 1/2 inch of dimensioned position.
- C. Place and consolidate grout fill without displacing reinforcing.

### 3.07 ENGINEERED MASONRY

- A. Reinforced hollow unit masonry shall be built to preserve the unobstructed vertical continuity of the cells. Head joints shall be solidly filled with mortar for a distance in from the face of the wall or unit not less than the thickness of the longitudinal face shells. Conform to Section 2104A, California Building Code.
- B. Walls and cross webs forming such cells shall be full-bedded in mortar to prevent leakage of grout.
- C. Mortar shall be as specified in Section 04060: Mortar and Grout.
- D. Bond shall be provided by lapping units in successive vertical courses. Where stack bond is used in reinforced hollow unit masonry the open end type of unit shall be used with vertical reinforcement spaced a maximum of 16 inch on center.
- E. Vertical cells shall have vertical alignment sufficient to maintain a clear, unobstructed continuous vertical cell measuring not less than 2 inches x 3 inches.
- F. At the time of laying, masonry units shall be free of excessive dust and dirt.
- G. Grout shall be workable mix suitable for placing without segregation and shall be thoroughly mixed. Grout shall be placed by pumping or an approved alternate method and shall be placed before initial set or hardening occurs. Grout shall be consolidated by puddling or mechanical vibration during placing and reconsolidated after excess moisture has been absorbed but before workability is lost. The grouting of any section of a wall shall be completed in one day with no interruptions greater than one hour. All cells shall be filled.
- H. Reinforcing except tie wires shall be embedded in the grout. The spacing between masonry units and reinforcing shall be a minimum of one bar diameter.

- I. Horizontal reinforcement shall be placed in bond beam units. The openings through webs for horizontal reinforcement shall be a minimum of 3 inch x 3 inch.
- J. Reinforcing shall be in place prior to grouting. Vertical reinforcing bars shall be held in position at the top, bottom and at intervals not farther apart than 160 bar diameters.

### 3.08 EXPANSION JOINTS

- A. Install expansion joints at approximately 20 ft on center, maximum 25 ft on center, unless indicated otherwise.
- B. Install preformed control joint devices in continuous lengths. Seal butt and corner joints in accordance with manufacturer's instructions.
- C. Size expansion joints in accordance in accordance with Drawings.
- D. Form expansion joint to full depth of wall, sealant both sides.

### 3.09 BUILT-IN WORK

- A. As work progresses, build in metal frames, anchor bolts and other items furnished by other Sections.
- B. Build in items plumb and level.
- C. Bed anchors of metal frames in adjacent mortar joints. Fill frame voids solid with grout.
- D. Do not build in organic materials subject to deterioration.

### 3.10 TOLERANCES

- A. Maximum Variation From Unit to Adjacent Unit: 1/32 inch.
- B. Maximum Variation From Plane of Wall: 1/4 inch in 10 feet and 1/2 inch in 20 feet or more.
- C. Maximum Variation From Level Coursing: 1/8 inch in 3 feet and 1/4 inch in 10 feet 1/2 inch in 30 feet.
- D. Maximum Variation of Joint Thickness: 1/8 inch in 3 feet.

### 3.11 CUTTING AND FITTING

- A. Cut and fit for conduit, sleeves, piping, grounds and other inserts. Coordinate with other Sections of work to provide correct size, shape and location. Cut blocks neatly and true.
- B. Obtain Engineer approval prior to cutting or fitting masonry work not indicated or where appearance or strength of masonry work may be impaired.

### 3.12 CURING

When atmosphere is dry, dampen the masonry surfaces with a light fog spray for three days during the curing period for the mortar. Use a nozzle regulated fog spray sufficiently to dampen but not of such quantities to cause water to flow down over masonry.

### 3.13 WATER REPELLENT COATING

Apply in accordance with Section 07190: Water Repellents.

### 3.14 CLEANING

- A. Remove excess mortar and mortar smears.
- B. Replace defective mortar. Match adjacent work.
- C. Clean soiled surfaces with an approved cleaning solution.
- D. Use non-metallic tools in cleaning operations.

### 3.15 PROTECTION OF FINISHED WORK

- A. Protect finish installation from damage.
- B. Without damaging completed work, provide protective boards at exposed external corners which may be damaged by construction activities.

**END OF SECTION**

## **SECTION 05120**

### **STRUCTURAL STEEL**

#### **PART 1 – GENERAL**

##### **1.01 SECTION INCLUDES**

Structural steel framing members, galvanized and shop-primed

##### **1.02 REFERENCES**

- A. AISC MO15L - Manual of Steel Construction
- B. AISC S323 - Quality Criteria and Inspection Standards
- C. ASTM A36 - Structural Steel
- D. ASTM A53 - Hot Dipped, Zinc-Coated Welded and Seamless Steel Pipe
- E. ASTM A108 - Steel Bars, Carbon, Cold-Finished, Standard Quality
- F. ASTM A123 - Zinc (Hot Dipped Galvanized) Coatings on Iron and Steel Products
- G. ASTM A153 - Zinc Coating (Hot Dip) on Iron and Steel Hardware
- H. ASTM A307 - Carbon Steel Externally Threaded Standard Fasteners
- I. ASTM A325 - High Strength Bolts for Structural Steel Joints
- J. ASTM A500 - Cold Formed Welded and Seamless Carbon Steel Structural Tubing in Round and Shapes
- K. ASTM C1107 - Packaged Dry, Hydraulic Cement Grout (Non-Shrink)
- L. AWS A2.4 - Standard Welding Symbols
- M. AWS D1.1 - Structural Welding Code
- N. AWS WHB-1 - Qualification and Certification
- O. AWS A5.1 - Carbon Steel Covered Arc-Welding Electrodes
- P. SSPC - Steel Structures Painting Council, SP-2, Hand Tool Cleaning
- Q. UBC Chapter 22, Division 1X - Allowable Stress Design and Plastic Design for Structural Steel Buildings

### 1.03 SUBMITTALS

- A. Submit Shop Drawings to Engineer:
  - 1. Indicate profiles, sizes, spacing and locations of structural members, connections, openings, attachments and fasteners.
  - 2. Indicate cambers.
  - 3. Indicate welded connections with AWS A2.4 welding symbols. Indicate net weld lengths.
- B. Submit to Engineer Manufacturer's Mill Certificate: Certify that products meet or exceed specified requirements.
- C. Submit to Engineer Mill Test Reports: showing structural strength, destructive and non-destructive test analysis and identification.
- D. Submit to Engineer Manufacturer's Certificates certifying welders employed on the work have been AWS qualified within the previous 12 months, in accordance with AWS-WHB-1.
- E. Submit fabricator's and erector's qualifications.

### 1.04 QUALITY ASSURANCE

- A. Fabricate structural steel members and perform work in accordance with AISC-M015L.
- B. Perform welding in accordance with AWS D1.1 and California Building Code Chapter 22, Division IX.

### 1.05 QUALIFICATIONS

- A. Fabricator: Company specializing in performing structural steel work minimum five years experience.
- B. Erector: Company specializing in performing structural steel work with minimum five years experience.

### 1.06 MEASUREMENT AND PAYMENT

Separate measurement or payment will not be made for work required under this Section. All costs in connection therewith will be considered incidental to the item of work to which it pertains.

## PART 2 – PRODUCTS

### 2.01 MATERIALS

- A. Structural Steel Members: ASTM A36



- B. Structural Tubing: ASTM A500, Grade B
- C. Pipe: ASTM A53, Grade B, Schedule 40
- D. Shear Stud Connectors: ASTM A108, Grade 1015 forged steel, headed, uncoated, granular flux filled shear connector or anchor studs by Nelson Stud Welding Division of TRW, Lorain, OH, or approved equal.
- E. Bolts, Nuts and Washers: ASTM A307 galvanized to ASTM A153 for galvanized members, American National Course Threaded Series
- F. High Strength Bolts: ASTM A325 Slip-Critical, tension set high strength bolts, by Bristol Machine Co., Walnut, CA, ICBO Approval No. 2932, or approved equal.
- G. Welding Materials: AWS A5.1, E70XX, type and procedures required by electrode manufacturer for materials being welded.
- H. Grout: ASTM C1107, non-shrink type, pre-mixed compound consisting of non-metallic aggregate, cement, water reducing and plasticizing additives, capable of developing a minimum compressive strength of 8,000 psi at 7 days; of consistency suitable for application and a 30 minute working time.
- I. Shop and Touch-Up Primer: Series P10-99 modified alkyd, red color, air dried, by Tnemec, or approved equal.
- J. Touch-Up Material for Galvanized Steel: Ready mixed, zinc-rich galvanizing compound, DEVCON Z, by Devcon Corp., Danvers, MA, GALVICON, by Southern Coatings, Sumter, SC, or approved equal.

## 2.02 SHEAR STUD CONNECTORS

- A. Space shear stud connectors as indicated on the drawings.
- B. Completely fuse end of stud to plate. Allow no porosity in weld.
- C. Allowable decrease in length of stud during welding:
  - 1. 1/8 inch for 5/8 inch diameter and smaller
  - 2. 3/16 inch for more than 5/8 inch diameter

## 2.03 FINISH

- A. Prepare structural component surfaces in accordance with SSPC SP-2.
- B. Shop prime structural steel members. Do not prime surfaces that will be fireproofed, field welded, in contact with concrete or high strength bolted.
  - 1. Clean surfaces to be primed, remove mill scale, grease, dirt and foreign matter. Two coats required for parts in contact but inaccessible for painting after erection.

## STRUCTURAL STEEL

2. Apply primer by brush or spray. Thoroughly work into joints, angles and open spaces. Allow primer to dry and harden prior to handling for delivery to the site.
  3. Clean contact surfaces immediately prior to assembly, leave unpainted.
  4. Coat machined surfaces with approved removable coating to prevent corrosion.
  5. After erection, clean field welds, field bolts and abraded portions and apply one additional brush spot coat using same paint material.
  6. All surfaces scheduled to receive sprayed-applied fireproofing shall be free of lubricants, oils, paint or other matter which will impair adhesion of fireproofing.
- C. Galvanize structural steel members where indicated to coating thickness in accordance with ASTM A123. All steel exposed to exterior weather conditions shall be galvanized, unless otherwise indicated.

### **PART 3 – EXECUTION**

#### **3.01 EXAMINATION**

- A. Verify that field conditions are acceptable and are ready to receive work. Report discrepancies between drawings and field dimensions to Engineer before commencing work.
- B. Beginning of installation means erector accepts existing conditions and surfaces underlying or adjacent to work of this section.

#### **3.02 ERECTION**

- A. Allow for erection loads and stresses, and for sufficient temporary bracing to maintain structure safe, plumb and in true alignment until completion of erection and installation of permanent bracing. Provide bracing for dead and live loads and wind loads. Keep bracing in place until required to maintain safe conditions.
- B. Contractor shall be responsible for correcting detailing and fabrication errors and for correct fitting of all members and components.
- C. Field weld components and shear studs indicated on structural drawings.
- D. Do not field cut or alter structural members without approval of Engineer.
- E. When approved, perform cutting, punching, drilling and tapping to accommodate work. Obtain accurate data as indicated on shop and erection drawings.

- F. After erection, prime welds, abrasions and surfaces not shop primed except surfaces to be in contact with concrete.
- G. Grout under base plates with the specified non-shrink grout.
- H. Provide anchor bolts with templates and diagrams. Contractor shall be responsible for proper location and installation of bolts. Correct deficiencies or errors.

### 3.03 ERECTION TOLERANCES

Conform to AISC S323.

### 3.04 HIGH STRENGTH BOLTS

- A. Allowable hole sizes: 1/16 inch larger than bolt size
- B. Use friction type connection with standard hardened steel circular, square or rectangular washer under bolt nut.
- C. Thoroughly clean area under bolt head, nut and washer. Remove all paint, lacquer, oil or other coatings except organic zinc-rich paints in accordance with SSPC, SP-2.
- D. Tighten bolts by power torque wrench or hand wrench until twist-off.

### 3.05 PUNCHING AND DRILLING

- A. Punch material 1/16 inch larger than nominal diameter of bolt, wherever thickness of metal is equal to or less than the diameter of the bolt plus 1/8 inch.
- B. Drill or sub-punch and ream where metal is equal to or more than the diameter of the bolt plus 1/8 inch. Make diameter for sub-punched and sub-drilled holes 1/16 inch larger than nominal diameter of bolt.
- C. Precisely locate holes to ensure passage of bolt through assembled materials without drifting. Enlarge holes when necessary to receive bolts by reaming. Poorly matched holes will be rejected.
- D. Punch and ream holes to receive high strength bolts.

### 3.06 WELDING

- A. Conform to AWS D1.1 and UBC Chapter 22, Division 1X.
- B. Perform welding by direct electric arc process. Use operators certified within proceeding 12 month period as per AWS "Standard Qualification Procedure."
- C. Chip welds to remove slag. Use wire brush to demonstrate uniformity of section, smoothness of welded metal, freedom from undercuts, overlays or feather edges and freedom from porosity and clinkers.

- D. Visually inspect edges and ends of fillets and butt joint welds for indication of good fusion and penetration into base metal. Grind smooth all exposed welds.
- E. Use of cutting torch will be allowed where metal being cut does not carry stress during the operations, and provided no stresses will be transmitted through a flame-cut surface. Make gas cuts smooth and regular in contour.
- F. To determine effective width of members subjected to gas cutting, deduct 1/8 inch from width of gas cut edges. Make radius of gas cut fillets as large as practicable, but in no case less than one inch. Gas cutting to align bolt is not permitted.

### 3.07 CLEANING AND STRAIGHTENING

- A. Before fabrication, thoroughly wire-brush material clean of scale and rust. Straighten by methods that will not injure materials.
- B. After punching or working, remove twists or bends before parts are assembled. Make finished members free from twists, bends and open joints when erected.

### 3.08 FITTING

- A. Closely fit members, finished true to line and in precise position required to allow accurate erection and proper joining in the field.
- B. Drilling to enlarge unfair holes will not be allowed. Light drifting to draw parts together will be permitted. Do not heat rolled sections, except for minor details.

### 3.09 QUALITY CONTROL

Required testing shall be performed under provisions of these Specifications.

### 3.10 HANDLING

Both in shop and in field, transport, handle and erect to preclude damage or overstressing of any component.

**END OF SECTION**

## SECTION 05270

### MISCELLANEOUS METALS

#### PART 1 – GENERAL

##### 1.01 SUMMARY

The Contractor shall furnish, fabricate and install miscellaneous metalwork and appurtenances, complete, in accordance with the requirements of the Contract documents and these Specifications.

##### 1.02 RELATED SECTIONS

- A. Section 02823 – LANDSCAPE METAL SCREEN
- B. Section 02825 – ORNAMENTAL STEEL FENCE SYSTEM, INDUSTRIAL
- C. Section 02826 – ORNAMENTAL STEEL FENCE, ENTRY GATE OPERATOR
- D. Section 05500 – METAL FABRICATIONS
- E. Section 07420 – PREFORMED METAL PANELS
- F. Section 13126 – PREFABRICATED GUARD HOUSE

##### 1.03 REFERENCES

- A. All codes, as referenced
- B. Federal Specifications:
  - 00-F-461 C (1) Floor Plate, Steel, Rolled
- C. Commercial Standards:
  - Aluminum Assn. AA-M32 C22A41
  - AISC Specifications and Commentary
  - AISI Specifications and Commentary
  - ASTM A-36 Specification for Structural Steel
  - ASTM A-48 Specification for Gray Iron Castings
  - ASTM A-53 Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated Welded and Seamless
  - ASTM A-123 Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products

### MISCELLANEOUS METALS

|                |   |
|----------------|---|
| ASTM A-125     | Specification for Steel Springs, Helical, Heat Treated              |
| ASTM A-153     | Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware |
| ASTM A-307     | Specification for Carbon Steel Bolts and Studs, 6,000 psi Tensile   |
| ASTM A-563     | Specification for Carbon and Alloy Steel Nuts                       |
| ASTM A-575     | Specifications for Steel Bars, Carbon, Merchant Quality, M-Grades   |
| ASTM B-98      | Specification for Copper-Silicon Alloy Rod, Bar and Shapes          |
| ASTM B-438     | Specification for Sintered Bronze Bearings (Oil Impregnated)        |
| ANSI/A WS D1.1 | Structural Welding Code – Steel                                     |
| NFPA 101       | Life Safety Code  |
| NAAMM          | Metal Stairs Manual   |

#### 1.04 SUBMITTALS

Submit the following in accordance with Conditions of Contract and these Specifications, to include:

- A. Shop drawings of all miscellaneous metal work shall be submitted to be Engineer for review.
- B. Anchors: Wherever Power-driven pins will be utilized for anchorage or support, complete information describing pin capacity, connections, and proposed use locations shall be furnished to the Engineer.

#### 1.05 MEASUREMENT AND PAYMENT

Separate measurement or payment will not be made for work required under this Section. All costs in connection therewith will be considered incidental to the item of work to which it pertains.

### **PART 2 – PRODUCTS**

#### 2.01 GENERAL REQUIREMENTS

- A. All structural steel shapes, plates, bars and their products shall conform to the requirements of ASTM A36.

- B. Corrosion Protection: Unless otherwise shown, miscellaneous metalwork of fabricated steel, which will be used in a corrosive environment and/or will be submerged in water/wastewater shall be coated and shall not be galvanized prior to coating. All other miscellaneous steel metalwork shall be hot-dip galvanized after fabrication as specified herein.
- C. Stainless Steel: Unless otherwise shown, stainless steel metalwork and bolts shall be of Type 316 stainless steel and shall not be galvanized. Where anaerobic conditions are anticipated, Type 304 stainless steel shall be used.

**END OF SECTION**

## **SECTION 05400**

### **COLD FORMED METAL FRAMING**

#### **PART 1 – GENERAL**

##### **1.01 SUMMARY**

Metal Studs and Joists

##### **1.02 RELATED SECTIONS**

Section 07420 – PREFORMED METAL PANELS

##### **1.03 SUBMITTALS**

Submit the following in accordance with these Specifications, to include:

Shop Drawings of the Metal Framing Work to the Engineer

##### **1.04 DELIVERY, STORAGE, AND HANDLING**

- A. Deliver, store and handle framing in manner to prevent damage or deformation.
- B. Discharge materials carefully, store on platform or pallets, and cover with tarpaulin or other suitable weather-tight covering.
- C. Do not overload framing during construction period and do not use framing for storage or working platform prior to installing in position.

##### **1.05 MEASUREMENT AND PAYMENT**

Separate measurement or payment will not be made for work required under this Section. All costs in connection therewith will be considered incidental to the item of work to which it pertains.

#### **PART 2 – PRODUCTS**

##### **2.01 MATERIALS**

- A. Metal stud fabrication shall conform to AISI specifications for the design of light gage cold formed sections.
- B. All galvanized studs (and/or) joists, 12, 14 and 16 gage, shall be formed from steel that conforms to the requirements of ASTM A446, Grade D, with a minimum yield strength of 50,000 psi.
- C. All galvanized 18 and 20 gage studs (and/or) joists, and all galvanized track, bridging and accessories shall be formed from steel that conforms to the



requirements of ASTM A446, Grade A, with minimum yield strength of 33,000 psi.

- D. Metal studs shall be as indicated on Drawings, see Drawings for required section properties.
- E. All welds for light gage steel shall be in accordance with AISC and AISI specifications.
- F. All welding shall be done by certified welders.
- G. All welds shall be inspected by a certified welding inspector.

## 2.02 FRAMING TYPES

### A. Metal Studs:

- 1. All metal studs to be heavy duty spaced as indicated on Drawings.
- 2. Place tracks at (E) or (N) slab-on-grade to be attached with HILTI DN32P8 powder driven fasteners at 6" c.c. or 3/8" diameter anchor bolts and 24 inch on center.
- 3. Self tapping screws to have the following minimum allowable shear values:

|     |         |
|-----|---------|
| #8  | 205 lbs |
| #10 | 277 lbs |
| #12 | 362 lbs |
| #14 | 483 lbs |

- 4. See Architectural Drawings for Substrates attached to studs.

## PART 3 – EXECUTION

### 3.01 EXAMINATION

- A. Examine construction to support framing to verify that setting conditions are proper.
- B. Verify that surfaces to receive decking are clean and otherwise suitable to receive welds.
- C. Do not proceed with installation until unsatisfactory conditions are corrected.

### 3.02 PEPARATION

Coordinate with other work supporting, contacting, or adjoining metal framing and verify requirements for cutting out, fitting and attaching.

### 3.03 INSTALLATION

- A. Framing shall be installed in a manner which will assure that ends of the studs are positioned against the track webs, prior to stud and track attachments.
- B. Studs shall be seated squarely in the track with the stud web and flange abutting the track web, plumbed and aligned, and securely attached to the flanges or web or both the upper and lower tracks.
- C. Wall stud bridging shall be attached in a manner to provide resistance to both minor axis bending and rotation, bridging rows shall be equally spaced not to exceed 3'-0" O.C.
- D. Splices in bearing studs shall not be permitted.
- E. Framing shall be located directly over bearing studs unless otherwise detailed.
- F. Framing bridging shall be provided as shown on plans and as recommended by the American Iron and Steel Institute (AISI).
- G. Provide additional framing studs where fascia panels are to be removed openings which interrupt one or more spanning members unless otherwise noted.
- H. End blocking shall be provided until erection is complete.
- I. Temporary bracing shall be provided until erection is complete.
- J. Framed stair openings shall include headers and supporting studs as shown on typical framing details provided by manufacturer unless otherwise noted.
- K. See structural sheet for standard details.

#### 3.04 FIELD QUALITY CONTROL

Testing Laboratory will review size, spacing and connections of metal framing.

**END OF SECTION**

## **SECTION 05500**

### **METAL FABRICATIONS**

#### **PART 1 – GENERAL**

##### **1.01 SECTION INCLUDES**

Shop fabricated ferrous metal items, galvanized and prime painted

##### **1.02 REFERENCES**

- A. ASTM A36 - Structural Steel
- B. ASTM A53 - Pipe, Steel, Black and Hot-Dipped, Zinc-coated Welded and Seamless Steel Pipe
- C. ASTM A123 - Zinc Coating (Hot-Dip) on Iron and Steel Products
- D. ASTM A153 - Zinc Coating (Hot-Dip) on Iron and Steel Hardware
- E. ASTM A167 - Stainless Steel and Heat-Resisting Chromium-Nickel Steel Plate, Sheet and Strip
- F. ASTM A283/A283M - Low and Intermediate Tensile Strength Carbon Steel Plates
- G. ASTM A307 - Carbon Steel Bolts and Studs, 60,000 psi Tensile
- H. ASTM A500 - Cold-Formed Welded and Seamless Carbon Steel Structural Tubing in Round and Shapes
- I. ASTM C1107 - Packaged Dry Hydraulic - Cement Grout (Non-Shrink)
- J. AWS A2.4 - Standard Welding Symbols, AWS D1.1 – Structural Welding Code
- K. AWS A5.1 - Carbon Steel Covered Arc-Welding Electrodes
- L. SSPC Paint 21 - Steel Structures Painting Council - White or Colored Silicone Alkyd Paint

##### **1.03 SUBMITTALS**

Submit Shop Drawings to Engineer: Indicate profiles, sizes, connection attachments, reinforcing, anchorage, size and type of fasteners and accessories. Include erection drawings, elevations and details where applicable. Indicate welded connections using standard AWS A2.4 Welding Symbols. Indicate net weld lengths.

##### **1.04 MEASUREMENT AND PAYMENT**

Separate measurement or payment will not be made for work required under this Section. All costs in connection therewith will be considered incidental to the item

### **METAL FABRICATIONS**

of work to which it pertains.

## **PART 2 – PRODUCTS**

### **2.01 MATERIALS**

- A. Steel Sections: ASTM A36
- B. Steel Tubing: ASTM A500, Grade B
- C. Plates: ASTM A283; Milled Steel
- D. Pipe: ASTM A53, Grade B, Schedule 40
- E. Fasteners: Standard commercial quality steel as required for application
- F. Bolts, Nuts and Washers: ASTM A307 galvanized to ASTM A153 for galvanized components
- G. Shop and Touch-Up Primer: SSPC Paint 21, Series P10-99 modified alkyd, red color, air dried, by Tnemec or equal as approved in accordance with these Specifications
- H. Touch-Up Primer for Galvanized Surfaces: Ready mixed Zinc rich galvanizing compound, DEVCON 2, by Devcon Corp., Danvers, MA, GALVICON, by Southern Coatings, Sumter, SC, or approved equal
- I. Stainless Steel: ASTM A167; Minimum 16 Gage, Type 304, No. 4 Finish
- J. Welding Materials: AWS A5.1, E70XX, type and procedures required by electrode manufacturer for materials being welded
- K. Grout: ASTM C1107, Non-shrink type, pre-mixed compound consisting of non-metallic aggregate, cement, water reducing and plasticizing additives, capable of developing a minimum compressive strength of 8,000 psi at 7 days; of consistency suitable for application and a 30 minute working time.

### **2.02 FABRICATION**

- A. Fit and shop assemble in largest practical sections for delivery to site.
- B. Fabricate items with joints tightly fitted and secured.
- C. Continuously seal joined members by continuous welds.
- D. Grind exposed joints flush and smooth with adjacent finish surface. Make exposed joints butt tight, flush and hairline. Ease exposed edges to small uniform radius.
- E. Exposed Mechanical Fastenings: Flush countersunk screws or bolts; unobtrusively located; consistent with design of component, except where specifically noted otherwise.

## **METAL FABRICATIONS**

- F. Supply components required for anchorage of fabrications. Fabricate anchors and related components of same material and finish as fabrication, except where specifically noted otherwise.

## 2.03 FINISHES

- A. Clean surfaces of rust, scale, grease and foreign matter prior to finishing.
- B. Do not prime surfaces in direct contact with concrete or where field welding is required.
- C. Prime paint items with two coats in accordance with requirements of SSPC-21.
- D. Galvanize steel items to a zinc coating thickness in accordance with ASTM A123. Surfaces shall be free of icicles, spangles and puddling. Vent all enclosed spaces. See drawings and schedules for extent of steel items to be provided with a galvanized finish.

## PART 3 – EXECUTION

### 3.01 EXAMINATION

- A. Verify that field conditions are acceptable and are ready to receive work.
- B. Upon beginning installation, the Contractor is assumed to accept the existing conditions.

### 3.02 PREPARATION

- A. Clean and strip primed steel items to bare metal where site welding is required.
- B. Supply items required to be cast into concrete or embedded in masonry with setting templates to appropriate sections.

### 3.03 INSTALLATION

- A. Install items plumb and level, accurately fitted, free from distortion or defects.
- B. Allow for erection loads and for sufficient temporary bracing to maintain true alignment until completion of erection and installation of permanent attachments.
- C. Field weld components indicated on shop drawings.
  - 1. Weld joints using shielded electric arc method. Use coated welded rods, not fluxed, or type recommended by manufacturer for use with parent metal. Use only certified welders for structural construction.
  - 2. Grinding: Grind welds on surfaces subject to traffic or contact to smooth flush joints.

- 3. Peening: Remove flux and weld spatter as necessary to eliminate unsightly conditions and grind off sharp projections.
- 4. Permanently Concealed Welds: No treatment required other than preparation for painting or galvanizing.
- D. Perform field welding in accordance with AWS D1.1.
- E. Obtain Engineer's approval prior to site cutting or making adjustments not scheduled.
- F. After erection, prime welds, abrasions and surfaces not shop primed except surfaces to be in contact with concrete.

#### 3.04 ERECTION TOLERANCE

- A. Maximum Variation From Plumb: 1/4 inch per story, non-cumulative
- B. Maximum Offset From True Alignment: 1/4 inch

#### 3.05 SCHEDULE

- A. The Schedule is a list of principal items only. Refer to Drawing details for items not specifically scheduled.
- B. Fasteners: Provide fasteners and connectors of approved types, whether indicated or not.
- C. Vertical Access Ladder: Steel, of 3/8 x 2 inch side rails spaced at 18 inches; rungs of 3/4 inch diameter solid rod spaced 12 inches on center; space rungs 7 inches from wall surface; with steel mounting brackets and attachments. Galvanize and paint exterior units. Galvanize interior units only.
- D. Bumper Posts and Guard Rails: As detailed; galvanized finish.
- E. Door Frames for Overhead Door Openings and Wall Openings: Channel sections; galvanized finish.
- F. Steel Backing Plates: 1/4 inch thick x widths and lengths required to support plumbing fixture hanger and equipment. Cope studs and weld plates flush to surface with continuous welds.
- G. Steel Corner Guards: Provide steel angle corner guards as detailed, complete with weld-on anchors. Hot dip galvanized after fabrication.
- H. Grates and Frames: Provide all gratings, covers and frames for catch basins, trench and storm drains. All work shall be galvanized or cast iron. Provide heavy-duty traffic trench type gratings, covers and frames in all traffic areas; manufactured by Alhambra Foundry Co., Alhambra, CA, McKinley Iron Works, Fort Worth, TX, or Neenah Foundry Co., Neenah, WI., or approved equal.

1. Gratings in traffic areas shall be narrow slot type, with openings not greater than ½" with direction of slots placed perpendicular to direction of traffic.
2. Covers shall be provided with recessed bolt attachment to frame.

**END OF SECTION**

## **SECTION 07190**

### **WATER REPELLENTS**

#### **PART 1 – GENERAL**

##### **1.01 SECTION INCLUDES**

- A. Concrete Masonry Units
- B. Reinforcement, anchorage and accessories

##### **1.02 RELATED SECTIONS**

- A. Section 03310 – CAST-IN-PLACE CONCRETE
- B. Section 04220 – CONCRETE MASONRY UNITS
- C. Section 04820 – REINFORCED UNIT MASONRY SYSTEM
- D. Section 13125 – FABRICATED GUARD HOUSE

##### **1.03 SUMMARY**

This section includes clear water-repellent coatings for the following vertical and non-traffic horizontal surfaces:

- 1. Split face CMU
- 2. Cast-in-place concrete, exposed aggregate, precast
- 3. Slab-on-grade pad

##### **1.04 PERFORMANCE REQUIREMENTS**

- A. Provide water repellents with the following properties based on testing manufacturer's standard products, according to test methods indicated, applied to substrates stimulating Site conditions using same materials and application methods to be used for the Work.
- B. Absorption: Minimum 90 percent reduction of absorption after 24 hours in comparison of treated and untreated specimens.
  - 1. Concrete Unit Masonry: ASTM C 140
  - 2. Hardened Concrete: ASTM C 642
- C. Water-Vapor Transmission: Maximum 10 percent reduction in rate of vapor transmission in comparison of treated and untreated specimen, per ASTM E96.
- D. Water Penetration and Leakage through Masonry: Maximum 90 percent reduction in leakage rate in comparison of treated and untreated specimens,

### **WATER REPELLENTS**



per ASTM C 1389.

- E. Durability: Maximum 5 percent loss of water repellency after 2500 hours of weathering, per ASTM G53.
- F. Permeability: Minimum 80 percent breathable in comparison of treated and untreated specimens, per ASTM D1653.

#### 1.05 SUBMITTALS

- A. Product Data: Include manufacturer's specifications, surface preparation and application instructions, recommendations for water repellents for each surface to be treated, and protection and cleaning instructions. Include data substantiating that materials are recommended by manufacturer for applications indicated and comply with requirements.
- B. Samples of each substrate indicated to receive water repellent, 300 mm (12 inches) square, with specified repellent treatment applied to half of each sample.
- C. Applicator Certificates: Signed by manufacturer certifying that the applicator complies with requirements.
- D. Certification by water repellent manufacturer that products supplied are in compliance with local regulations for the controlling use of VOC's.

#### 1.06 QUALIFICATIONS

- A. Applicator Qualifications: Engage an experienced applicator who employs only persons trained and approved by water repellent manufacturer for application of manufacturer's products
- B. Regulatory Requirements: Comply with applicable rules of pollution-control regulatory agency having jurisdiction in Project locale regarding VOCs and use of hydrocarbon solvents.

#### 1.07 QUALITY ASSURANCE

- A. Applicator Qualifications: Engage an experienced applicator who employs only persons trained and approved by water repellent manufacturer for application of manufacturer's products
- B. Regulatory Requirements: Comply with applicable rules of pollution-control regulatory agency having jurisdiction in Project locale regarding VOCs and use of hydrocarbon solvents.
- C. Field Samples: Engineer will select one representative surface for each substrate to receive water repellents. Apply water repellent to each substrate, with either partial or full coverage as directed. Comply with application requirements of this Section.
  - 1. Obtain Engineer's approval of field samples before applying water repellents.

### WATER REPELLENTS

2. Maintain field samples during construction in an undisturbed condition as a standard for judging the completed Work.

#### 1.08 PROJECT CONDITIONS

Weather and Substrate Conditions: Do not proceed with application of water repellent under any of the following conditions. Except with written instruction of manufacturer:

1. Ambient temperature is less than 50 degrees F.
2. Concrete surfaces and mortar have cured for less than 7 days.
3. Rain or temperatures below 50 degrees F are predicted within 24 hours.
4. Application is earlier than 24 hours after surfaces have been wet.
5. Substrate is frozen or surface temperature is less than 50 degrees F.
6. Windy condition exists that may cause water repellent to be blown onto surfaces not intended to be coated.

#### 1.09 WARRANTY

- A. General Warranty: The special warranty specified in the Article shall not deprive the Engineer of other rights the Engineer may have under other provisions of the Contract Documents and shall be in addition to, and run concurrent with, other warranties made by the Contractor under requirements of the Contract Documents.
- B. Special Warranty: Submit a written warranty, executed by the applicator and water repellent manufacturer, covering materials and labor, agreeing to repair or replace materials that fail to provide water repellency within the specified warranty period. Warranty does not include deterioration or failure of coating due to unusual weather phenomena, failure of prepared and treated substrate, formation of new joints and cracks in excess of 1/16 inch wide, fire, vandalism, or abuse by maintenance equipment.

Warranty Period: Five (5) years from date of Acceptance.

#### 1.10 MEASUREMENT AND PAYMENT

Separate measurement or payment will not be made for work required under this Section. All costs in connection therewith will be considered incidental to the item of work to which it pertains.

### PART 2 – PRODUCTS

#### 2.01 MANUFACTURERS

Available Products: Subject to compliance with requirements, products that may be

incorporated into the Work included, but are not limited to the following:

Proprietary Acrylic Blend: With 127g/L VOC's or less

OKON PLUS COLOR SEALER and STAIN, OKON, Inc., 4725 Leyden St., Unit A, Denver, CO 80216-3301 at Phone 303-377-7800 or 800-237-0565 or Facsimile 303-321-7880 or Internet Mail [info@okoninc.com](mailto:info@okoninc.com). Internet Web Site [www.okoninc.com](http://www.okoninc.com), or approved equal.

## 2.02 WATER REPELLENTS

- A. Acrylic: Water-based acrylic micro-emulsion containing fifteen (15) percent solids minimum by weight.
- B. VOC-Complying Water Repellents: Products complying with local regulations controlling use of VOC's, as certified by manufacturer.
- C. Color and Opacity: Combine tint base with 100 percent acrylic paint or universal colorant. Color and transparency are to be selected and approved by the Engineer.

## PART 3 – EXECUTION

### 3.01 PREPARATION

- A. Clean substrate of substances that might interfere with penetration or performance of water repellents. Test for moisture content, according to repellent manufacturer's written instructions, to ensure surface is sufficiently dry.
- B. Formed Concrete: Remove oil, curing compounds, laitance, and other substances that could prevent adhesion or penetration of water repellents.
- C. Test for pH level, according to water repellent manufacturer's written instructions, to ensure chemical bond to silicate minerals.
- D. Protect adjoining work, including sealant bond surfaces, from spillage or over spray of water repellent. Cover adjoining and nearby surfaces of aluminum and glass if there is the possibility of water repellent being deposited on surfaces.
- E. Coordination with Sealants: Do not apply water repellent until sealants for joints adjacent to surfaces receiving water repellent treatment have been installed and cured.
- F. Water repellent work may precede sealant application only if sealant adhesion and compatibility have been tested and verified using substrate, water repellent, and sealant materials identical to those used in the Work.
- G. Test Application: Before performing water repellent work, including bulk purchase and delivery of products, prepare a small application in an unobtrusive location and in a manner approved by Engineer to demonstrate the final effect (visual, physical and chemical) of planned

## WATER REPELLENTS

application. Proceed with work only after Engineer approves test application or as otherwise directed.

- H. Revisions of planned application, if any, may be requested by the Engineer.

### 3.02 APPLICATION

- A. Apply a heavy saturation spray coating of water repellent on surfaces indicated for treatment using low pressure spray equipment. Comply with manufacturer's written instructions for using airless spraying procedure, unless otherwise indicated.
- B. Precast Work: At Contractor's option, first application of water repellent on precast concrete units may be completed before installing units. Mask sealant bond surfaces to prevent water repellent from migrating onto joint surfaces.
- C. Apply a second saturation spray coating, repeating first application. Comply with manufacturer's written instructions for limitations on drying time between coats and after rainstorm wetting of surfaces between coats. Consult manufacturer's technical representative if written instructions are not applicable to Project conditions.

### 3.03 FIELD QUALITY CONTROL

- A. Manufacturer's Field Service:  
  
Provide services of a factory authorized technical service representative to inspect and approve the substrate before application and to instruct the applicator on the product and application method to be used.

### 3.04 CLEANING

- A. Protective Coverings: Remove protective coverings from adjacent surfaces and other protected areas.
- B. Immediately clean water repellent from adjoining surfaces and surfaces soiled or damaged by water repellent application as work progresses. Repair damage caused by water repellent application. Comply with manufacturer's written cleaning instructions.

**END OF SECTION**

## SECTION 07420

### PREFORMED METAL PANELS

#### PART 1 – GENERAL

##### 1.01 SUMMARY

A. Section Includes:

Preformed metal fascia system complete with clips, perimeter and penetration flashing closures, and sub-framing as indicated on the drawings.

B. Special Requirement:

A change in the specified material may be required by the Engineer after review of the submitted materials and mock-up. The Contractor is advised that on the panel submittal, which includes shop drawings, product data, color samples for temporary mock-up fascia panels only, and temporary installation procedures. Only two six-foot long panels for each application shall be required, and the Contractor shall notify the Engineer within 24 hours of the installation. This submittal must take place within 30 days of the Notice to Proceed. The Engineer will review and return mock-up submittal within 15 days. Upon Engineer's approval of mock-up submittal, Contractor to install mock-up(s) within 20 days. Upon Contractor installation of mock-up(s), Engineer will have 14 days to review and approve. The Contractor to remove temporary mock-up(s).

The Contractor shall request the Engineer to inspect and review the panels prior to placement of an order for the final quantity of material. Should the Engineer require the Contractor to change panel materials, any additional compensation based on a change of materials for the panels shall be furnished through EXTRA WORK AS DIRECTED BY THE ENGINEER, Bid Item No. 37.

All other conditions listed in this Article still apply.

Contractor will still be required to submit on fascia system in accordance with Article 1.03.

##### 1.02 RELATED SECTIONS

- A. Section 05120 – STRUCTURAL STEEL
- B. Section 05270 – MISCELLANEOUS METALS
- C. Section 05400 – COLD FORMED METAL FRAMING
- D. Section 05500 – METAL FABRICATIONS

##### 1.03 SUBMITTALS

### PREFORMED METAL PANELS

Submittals according to the Conditions of the Contract and of these specifications, to include:

A. Shop Drawings

Show fascia system with flashings and accessories in plan and elevation; sections and details. Include metal thickness and finishes, panel lengths, joining details, anchorage details, flashings and special fabrication provisions for termination and penetrations. Thermal expansion provisions and special supports indicate relationships with adjacent and interfacing work. Shop drawings must be completed by the metal panel manufacturer's engineering department. Any and/or all changes recommended by the successful bidder must be approved by the manufacturer in writing prior to submittal.

B. Product Data

Include manufacturer's detailed material and system description, sealant and closure installation instructions, engineering performance data and finish specifications.

C. Samples of finish matching selected colors.

D. Design Test Reports:

1. Must meet UL-90 classification in accordance with UL 580 test procedure.
2. Air Infiltration test in accordance with ASTM E 283.
3. Water penetration test in accordance with ASTM E 331.

#### 1.04 QUALITY ASSURANCE

A. Reference Standards

Engage an experienced metal fascia contractor (erector) to install standing seam system who has a minimum of three (3) years experience specializing in the installation of architectural standing seam fascia systems.

B. Contractor shall be certified by manufacturer specified as supplier of the architectural standing seam system and obtain written certification from manufacturer that installer is approved for installation of specified system. If requested, Contractor must supply Engineer with a copy of this certification.

C. Contractor is required to maintain a full-time supervisor who is on the job-site at all times during installation of fascia system. Foreman must have a minimum of five (5) years experience with the installation of system similar to that specified.

D. Contractor shall obtain all components of fascia system from a single manufacturer.

- E. Fabricator/installer shall submit work experience and evidence of adequate financial responsibility.

#### 1.05 DESIGN AND PERFORMANCE CRITERIA

##### A. Thermal movement:

1. Completed metal fascia and flashing system shall be capable of withstanding expansion and contraction of components caused by changes in temperature without buckling, producing excess stress on structure, anchors or fasteners, or reducing performance ability.
2. Location of metal fascia rigid connection shall be designed per job conditions by fascia system manufacturer.

#### 1.06 MANUFACTURER'S QUALIFICATIONS

The materials outlined in the Material and Method Specifications are the type of materials that should be used on this project. Contractor will not be allowed to change materials after the bid opening data. Contractor will not be allowed to supply panels formed at the job-site on portable roll formers; metal panels must be pre-manufactured and engineered for this project. If the Contractor wishes to propose an alternate manufacturer and/or material than that specified, the following manufacturer criteria must be submitted with the bid.

1. Submit certified test reports from a testing laboratory that bear the stamp of a registered P.E. to show compliance with specified performance criteria.
2. Indicate fastener types and spacing and provide fastener pull out values.
3. A list of a minimum of five (5) jobs where the proposed alternate material was used under similar conditions.
4. A written statement from the manufacturer stating that they will provide Engineer with a daily site inspection for a minimum of one (1) hour by an experienced, full time employee of the company.

#### 1.07 DELIVERY, STORAGE AND HANDLING

- A. Protect components during fabrication and packing from mechanical abuse, stains, discoloration and corrosion.
- B. Provide protection interleaving between contact areas of exposed surfaces to prevent abrasion during shipment, storage and handling.
- C. Store materials off ground providing for drainage; under cover providing for air circulation; and protected from wind movement, foreign material contamination, mechanical damage, cement, lime or other corrosive substances.

- D. Handle materials to prevent damage to surfaces, edges and ends of fascia sheets and sheet metal items.
- E. Damaged material shall be rejected and removed from the site. Protect panels from wind-related damages. Inspect material upon delivery.
- F. Reject and remove physically damaged or marred material from project site.

#### 1.08 JOB CONDITIONS

- A. Determine that work of other trades will not hamper or conflict with necessary fabrication and storage requirements for preformed metal fascia system.
- B. Provide protection on completed surfaces.
- C. Ascertain that work of other trades which penetrates the fascia is in place and approved prior to installation of the fascia.

#### 1.09 WARRANTIES

District shall receive one (1) warranty from manufacturer of fascia panels covering the following criteria. Multiple warranties are not acceptable.

- 1. Manufacturer's standard 20 year finish warranty covering checking, crazing, peeling, chalking, fading or adhesion.
- 2. Installer's warranty covering fascia system installation and water- tightness.
- 3. Manufacturer's 20 year material warranty.
- 4. Warranties shall commence on the date of Acceptance of the Installation Phase.

#### 1.10 MEASUREMENT AND PAYMENT

Full compensation for furnishing all labor, all connectors, materials, tools, equipment, and incidentals and for doing all work required for preformed metal panels as shown on the Drawings and as specified in these Specifications and will be measured for payment by the square foot to the limits indicated on the plans, and will be paid for at the contract unit price per square foot, as part of the price bid for FASCIA PANELS AND SUPPORTS, Bid Item No. 28.

### PART 2 – PRODUCTS

#### 2.01 MATERIALS

- A. Manufacturer:
  - 1. The Garland Company, R-mer Seam Batten. Area Representative: Jay Mulligan, 800-762-8225.



2. Or approved equal.

- B. Panel material: 22 gauge, Galfan steel, type GF-90, per ASTM A875-90.
- C. Flashing and flat stock material: Fabricate in profiles indicated on drawings of same material, thickness and finish, unless indicated otherwise.

## 2.02 FINISH ON SURFACES

Exposed surfaces for coated Galfan:

- 1. Finish: Valspar "Fluropon Classic" system, 2.4-mil thickness, or equal. Panel manufacturer's three-coat system of 0.8-mil clear coat over 0.8-mil 70-percent Kynar 500 fluorocarbon over 0.8-mil epoxy-based primer on finish side.
- 2. Custom color "Weathered Copper" to match existing metal roof at existing Belt Press Building and color as noted on the Drawings.

## 2.03 CHARACTERISTICS

- A. Fabrication: Panels and battens shall be factory roll-formed from specified metal. Field rolled panels will not be allowed.
- B. Configuration: Panels shall incorporate concealed anchor clips allowing thermal movement. Batten caps shall securely snap over the concealed anchor clips.
- C. Batten caps: Shall be type L, 1-3/4" x 1-7/8". Batten caps shall allow for expansion and contraction of panels due to thermal changes.
- D. Anchor clips shall be 24 gauge galvanized steel designed to allow thermal movement of the panel.
- E. Panel width, 12 inches.
- F. Panel length: Full length without joints.
- G. Panel assemblies in six foot lengths shall be fully removable for access to the water treatment facilities features.

## 2.04 ACCESSORIES

- A. Fasteners:
  - 1. Concealed fasteners: Corrosion resistant steel screws, #10 x 1" long, pancake head, Philips drive. Use self-drilling, self tapping for metal substrate or A-point for plywood substrate. Use die-electric material between panel and panel fasteners when attaching to structural elements.

2. Exposed fasteners: Corrosion resistant steel screws (cadmium or zinc coatings are not acceptable) of stainless steel with neoprene sealing washer, or 3/16" diameter waterproof rivets.
  3. Provide miscellaneous accessories for complete installation.
- B. Sealant:
1. Concealed Application: PT1-707, or Bostik Chem-Calk, or approved equal, butyl sealant.
  2. Exposed Application: General Electric Co., SILGLAZE II 2800, or approved equal.
  3. Colors: As selected by the Engineer from sealant manufacturer's standard selection.

## **PART 3 – EXECUTION**

### **3.01 PREPARATION**

- A. Inspection: Examine the alignment and treatment basin, piping and substrate. Correct objectionable warp, waves or buckles in the substrate before proceeding with installation of the preformed metal fascia and its sub-framing. Erect scaffolding as necessary to install the work.
- B. Pre-installation conference: Prior to beginning metal fascia work, a pre-installation conference shall be held to review work to be accomplished.
1. Contractor, metal fascia subcontractor, metal fascia system manufacturer's representative and all other subcontractors who have equipment penetrating the fascia or whose work involves access to the fascia shall be present.
  2. Contractor shall notify the Engineer and other attending parties at least ten working days prior to time for conference.

### **3.02 FASCIA AND FLASHING INSTALLATION**

- A. Install sub-framing, fascia and flashings in accordance with approved shop drawings and manufacturer's product data, within specified erection tolerances.
- B. Isolate dissimilar metals, and masonry or concrete from metals, using bituminous coating. Use gasket fasteners where required to prevent corrosive action between fastener, substrate and panels.
- C. Limit exposed fasteners to extent indicated on shop drawings.
- D. Anchorage shall allow for temperature expansion/contraction movement without stress or elongation of panels, clips or anchors. Attach clips to structural substrate using fasteners of size and spacing as determined by

manufacturer's design analysis to resist specified uplift and thermal movement forces.

- E. Seal laps and joints in accordance with fascia system manufacturer's product data.
- F. Coordinate flashing and sheet metal work to provide conditions at fascia terminations and six foot removable sections. Fabricate and install in accordance with standards of SMACNA Manual.
- G. Provide for temperature expansion and contraction movement of panels at fascia penetrations in accordance with manufacturer's system.
- H. Installed system shall be true to line and plane and free of dents and physical defects with a minimum of oil canning.
- I. Form joints in linear sheet metal to allow for ¼" minimum expansion.
- J. At joints in linear sheet metal items, set sheet metal items in two ¼" beads of butyl sealant. Extend sealant over all metal surfaces. Mate components for positive seal. Allow no sealant to migrate onto exposed surfaces.
- K. Remove damaged work and replace with new, undamaged components.
- L. Touch up exposed fasteners using paint furnished by fascia panel manufacturer and matching exposed panel surface finish.
- M. Clean exposed surfaces of fascia and accessories after completion of installation. Leave in clean condition at date of substantial completion. Touch up minor abrasions and scratches in finish.

**END OF SECTION**

## **SECTION 13126**

### **PREFABRICATED GUARDHOUSE**

#### **PART 1 – GENERAL**

##### **1.01 SUMMARY**

Furnish prefabricated, welded steel guardhouse as specified.

##### **1.02 SUBMITTALS**

Submit according to the Conditions of the Contract and these Specifications, the following:

Shop drawings indicating all components and attachments prior to fabrication.

##### **1.03 RELATED SECTIONS**

- A. Section 02315 – EXCAVATING, BACKFILLING, COMPACTING AND GRADING
- B. Section 02753 – CONCRETE FINISHES
- C. Section 02825 – ORNAMENTAL STEEL FENCE, INDUSTRIAL
- D. Section 02826 – ORNAMENTAL STEEL FENCE, ENTRY GATE OPERATOR
- E. Division 3 – CONCRETE
- F. Section 05270 – MISCELLANEOUS METALS
- G. Section 05500 – METAL FABRICATIONS
- H. Section 07190 – WATER REPELLENTS
- I. Division 16 – ELECTRICAL

##### **1.04 QUALITY ASSURANCE**

- A. Manufacturer Qualifications: Five (5) years minimum experience in manufacturing factory built metal shelter buildings.
- B. Design Criteria: Fabricate guardhouse to support normally imposed loads and in accordance with local codes applicable at the San Jose site and shall comply with California Title 24.
- C. Guardhouse shall meet the 2001 edition of the C.B.C. All electrical components shall meet the 2002 N.E.C. and have a U.L. label.

##### **1.05 PRODUCTS DELIVERY, STORAGE AND HANDLING**

### **PREFABRICATED GUARDHOUSE**

Deliver factory completed guardhouse to the job site; exact location as directed.

## 1.06 MEASUREMENTS AND PAYMENTS

Guard House shall be paid for at the Contract Lump Sum Price. Also included is the concrete pad and all associated work, all electrical connections and telephone distribution system as part of the price bid for GUARD HOUSE, Bid Item No. 30.

## PART 2 – PRODUCT

### 2.01 MATERIALS

#### A. Prefabricated guardhouse building:

1. Manufacturers: Big Enterprises, 9702 East Rush Street, South El Monte, Calif. 91733-1731 (621) 448-1449, Dave King, or approved equal.
  - a. Building size as shown by outside dimensions at floor plan on architectural plans.
  - b. Use Model DS680BS, or approved equal.
2. Plan to include work surface shelves, swing doors, electrical panel, wire- mold, receptacles, lights, J-box, load center, air conditioner, anchor clips, canopy lights.
3. Frame: To be minimum A-500, 2" x 2" x .083 structural mechanical steel tubing, formed for accuracy.
4. Wall System: To be a minimum of A-527, 16ga. Cold rolled galvanized steel interior panels MIG welded between frame and mullions for self aligning unitized system, insulated to R-10.
5. Custom Finish: Manufacturer to apply a panelized, thin brick veneer system to exterior walls to height indicated on Drawing A-14. Texture and color to match adjacent CMU wall.
6. Roof: to be all steel construction, designed for exterior use, insulated to R-19. Roof to be a custom standing seam hip style, constructed of internal steel framing with ¾" exterior grade plywood siding that is covered with roofing paper and finish with 24ga. Galvanized steel standing seam decking with baked on finish. Roof shall have a 12" overhang on all sides, with 6" fascia. Unit shall have two additional awning type overhangs, designed to bolt to the booth header, over each door. Overhangs to be approximately, 40" wide x 36" deep and are to have stainless steel wire hold back supports with turn buckles. Roof to have removable lifting eyes for hoisting by cranes.
7. Floor: Unit to have A-569, 11ga. Steel plate floor covered with heavy duty, 1/8" x 19" black raised rubber tiles and base cove, mounted on

- a 2 inch steel tube frame and joists, with ¼" steel anchor plates welded to floor frame with pre drilled holes for anchoring of unit.
8. Door: Unit to have two heavy duty steel framed swing out commercial doors, minimum 3' x 6'-8", one mounted on each 6' end with stainless steel NRP hinges, Lever handle with locking hardware keyed alike and hydraulic closer.
  9. Windows: 16 Ga. galvanized steel window frame system (painted to match booth) with flush mounted corners and welded fastening. Window glazed with ¾" (three-quarter inch) tinted dual pane insulating glass, interior glass stops with heavy duty fasteners.
  10. Electric System: To be all U.L. approved fixtures wired to N.E.C. standards with:
    - a. One interior 1' x 4' dual bulb fluorescent light recessed in steel ceiling and controlled by switches.
    - b. Two exterior 1' by 4' bulb fluorescent light recessed into soffit of removable roof section, as shown on drawings.
    - c. Each canopy over the door to have a 2 foot wall bracket light controlled by interior switches.
    - d. 3 circuit wire mold mounted above each shelf and 1-220 volt outlet mounted below each shelf.
    - e. Items to be wired to 125 Amp, 120\240 volt, 24 poles, 3 wire single phase load center
    - f. Electric panel cabinet, mounted on interior wall.
    - g. Exterior lighting control panel mounted on interior wall.
    - h. Telephone cabinet NEMA 3R enclosure mounted on interior wall.
  11. Conduits & Boxes: Unit to have two empty 4" x 4" J-Boxes mounted under the front shelf with six separate 2 inch empty conduit runs to the stub area for Data & Communication lines by others.
  12. Shelf: Unit to have 18 inch deep full width steel shelf at the walls indicated on Drawings, mounted at 34 inches AFF and to be covered with a white plastic laminate.
  13. Air Conditioner: Unit to have a commercial through the side wall mounted air conditioner with a minimum of 11,600 BTU heating and cooling at 230 volts. A/C to be mounted in a painted steel shroud with louver grill that extends out past the facade by 2" maximum.

14. Weather Proofing: All seams and joints are to be pressure bonderized, all opening to be fully weather stripped, floor and underside of structural elements to be bitimous coated.
15. Finish: Unit to be electrostatically painted with RUST inhibitive coating system. Using a High build primer, and two part catalyst polyurethane finish coat. Overall system to have minimum 5 mil rating, and to carry a minimum of 1500 hr. salt spray test. Color to be specified by District.
16. Roof insulated, R-19.
17. Anchoring: Four (4) anchoring pads with 1-inch diameter holes weld to floor frame and anchored to the concrete pad by ½" anchor bolts.

### **PART 3 – EXECUTION**

#### **3.01 INSPECTION**

Verify that surfaces to receive guardhouse are free of irregularities interfering with installation. Do not begin installation until unsatisfactory conditions have corrected.

#### **3.02 INSTALLATION**

- A. Install guardhouse to concrete floor slab with concrete anchor bolts.
- B. Install accessories and hardware as necessary in accordance with manufacturer's installation procedures and reviewed shop drawings.

#### **3.03 PROTECTION**

- A. Protect guardhouse from damage from adjacent Work until final acceptance.
- B. Repair or replace damage from adjacent Work as required.

**END OF SECTION**

## **SECTION 16010**

### **BASIC ELECTRICAL REQUIREMENTS**

#### **PART 1 – GENERAL**

##### **1.01 SCOPE OF WORK**

- A. This section supplements all sections of this division and shall apply to all phases of work hereinafter specified, shown on the drawings, or required to provide a complete installation of electrical systems for the Project. The Work required under this division, is not limited to the Electrical Drawings. Refer to Site, Architectural, Irrigation, Structural, and Mechanical Drawings that may designate Work to be accomplished. The intent of the Specifications is to provide a complete electrical system that includes all documents that are a part of the Contract.

Work Included: Furnish all labor, material, services and skilled supervision necessary for the construction, erection, installation, connections, testing, and adjustment of all circuits and electrical equipment specified herein, or shown or noted on the Drawings, and its delivery to the District complete in all respects ready for use.

- B. Contract Drawings: The Contract Drawings are shown in part diagrammatic, intended to convey the Scope of Work indicating the intended general arrangement of equipment, conduit and outlets. Follow the contract drawings in laying out the work and verify spaces for the installation of the materials and equipment based on actual dimensions of equipment furnished. Where conflicts occur, the most stringent application shall apply wherever a question exists as to the exact intended location of outlets or equipment; obtain instructions from the Engineer before proceeding with the Work.
- C. Equipment or Fixtures: Equipment and fixtures shall be connected to provide circuit continuity in accordance with the Specifications whether or not each piece of conductor, conduit, or protective device is shown between such items of equipment or fixtures, and the point of circuit origin.
- D. Work Installed but Furnished under Other Sections: The Electrical Work includes the installation or connection of certain materials and equipment furnished under other sections. Verify installation details. Foundations for apparatus and equipment will be furnished under other sections unless otherwise noted or detailed.

##### **1.02 GENERAL REQUIREMENTS**

- A. Guarantee: Furnish a written guarantee for three years from the date of Final Acceptance of the Installation Phase.
- B. Equipment Safety: All electrical materials and equipment shall be new and shall be listed by Underwriter's Laboratories and bear their label, or listed and certified by a nationally recognized testing authority where UL does not have an approval. Custom made equipment must have complete test data submitted by the manufacturer attesting to its safety.



C. Codes and Regulations:

Design, manufacture, testing and method of installation of all apparatus and materials furnished under the requirements of these specifications shall conform to the latest publications or standard rules of the following:

Institute of Electrical and Electronic Engineers - IEEE  
National Electrical Manufacturers' Association - NEMA  
California Fire Code - CFC  
California Building Code - CBC  
Underwriters' Laboratories, Inc. - UL  
National Fire Protection Association - NFPA  
Federal Specifications - Fed. Spec.  
American Society for Testing and Materials - ASTM  
American National Standards Institute - ANSI  
American Standard Association - ASA  
California Electrical Code - CEC  
National Electrical Safety Code - NESC  
Insulated Power Cable Engineers Association - IPCEA  
Public Utilities Commission - PUC  
State & Municipal Codes in Force in the Specific Project Area  
Occupational Safety and Health Administration -OSHA

The term "Code", when used within the specifications, shall refer to the Publications, Standards, ordinances and codes, listed above. In the case where the codes have different levels of requirements the most stringent rules shall apply.

D. Seismic Design of Electrical Equipment:

1. All electrical prefabricated equipment is to be designed and constructed in such a manner that all portions, elements, sub-assemblies and/or parts of said equipment and the equipment as a whole, including their attachments, will resist a horizontal load equal to the operating weights of those parts multiplied times the following factors:

| <u>Type of Equipment</u>   | <u>Horizontal CP</u> | <u>Vertical CP</u> |
|--|----------------------|--------------------|
| Rigid and rigidly supported piping or equipment such as boilers, chillers, pumps, motors, transformers, unit substations and control panels.   | 0.50                 | 0.33               |
| Flexible and flexibly supported equipment such as air-handling units, piping and other equipment so supported that the fundamental period of vibration of the equipment and its supporting system is greater than 0.05 |                      |                    |

seconds. Communication  
equipment and emergency  
stand-by equipment.

1.00

0.67

2. Load is to be applied at the center of gravity of the part and to be in any direction horizontally. Design part to be in any direction horizontally. Design stresses shall be in accordance with the specifications for design of the American Institute of Steel Construction. Anchorage, support and/or attachment of said prefabricated equipment to the structure should be in accordance with the details found in the plans and specifications.
3. It is the entire responsibility of the Contractor to verify the design of equipment so that the strength and anchorage of the internal components of the equipment exceeds the force level used to restrain and anchor the unit itself to the supporting structure.

E. Requirements of Regulatory Agencies:

1. Codes, Permits and Fees: Where the Contract Documents exceed minimum requirements, the Contract Documents take precedence. Where code conflicts occur, the most stringent shall apply unless variance is approved. Where provisions in the drawings and specifications differ in regard to code application, size, quality, quantity or type of equipment, Contractor shall include in the bid, costs for the most costly provision either denoted in the specifications or on the drawings. This provision shall apply as an amendment to the California Public Contracts Code.
  - a. Comply with all requirements for permits, licenses, fees and Code. Permits, licenses, fees, inspections and arrangements required for the Work shall be obtained by the Contractor and at the Contractor's expense, unless otherwise specified.
  - b. Comply with the requirements of the applicable utility companies serving the Project. Make all arrangements with the utility companies for proper coordination of the Work.

F. Cutting and Patching:

1. Obtain written permission from the Engineer before core drilling or cutting any structural members. Exact method and location of conduit penetrations and/or openings in concrete walls, floors, or ceilings shall be approved by the Engineer.
2. All core drilling, cutting and patching for this work shall be performed under this Section of the specifications. Use craftsmen skilled in their respective sections for cutting, fitting, repairing, patching of plaster and finishing of materials including carpentry work, metal work or concrete work required for this Work. Do not weaken walls, partitions or floor with cutting. Holes required to be cut in floors must be drilled without excessive breaking out around the holes. Patching and/or refinishing shall be determined by the Engineer.

3. Use care in piercing waterproofing. After the part piercing the waterproofing has been set in place, seal openings and make absolutely watertight.
4. Seal all openings to meet the fire rating of the particular wall floor or ceiling.

### 1.03 JOB CONDITIONS

#### A. Existing Conditions:

1. The contractor shall visit the site and verify existing conditions. Where existing conditions differ from the drawings, adjustment shall be made and allowances included for all necessary equipment to complete all parts of the drawings and specifications.
2. Electrical circuits affecting work shall be de-energized while working on or near them.
3. Arrange the work so that electrical power is available to all electrical equipment within existing facility at all times. Schedule all interruptions at the convenience of the Engineer, including exact time and duration. Provide temporary power during all periods of interruption, which are deemed excessive by the Engineer. Costs of all premium time (overtime) resulting from the scheduled power interruptions and all costs for providing temporary power shall be included in the cost of the Work.

#### B. Protection:

1. Protection of apparatus, materials and equipment. Take such precautions as necessary to properly protect all apparatus, fixtures, appliances, material, equipment and installations from damage of any kind. The Engineer may reject any particular piece or pieces of material, apparatus or equipment scratched, dented or otherwise damaged.
2. Seal equipment or components exposed to the weather and make watertight and insect proof. Protect equipment outlets and conduit openings with temporary plugs or caps at all times that work is not in progress.

#### C. Sequencing and Scheduling:

1. Work lines and established heights shall be in strict accordance with architectural drawings and specifications insofar as these drawings and specifications extend. Verify all dimensions shown and establish all elevations and detailed dimensions not shown.
2. Lay out and coordinate all work well enough in advance to avoid conflicts or interferences with other work in progress so that in case of interference the electrical layout may be altered to suit the conditions, prior to the installation of any work and without additional cost to the Engineer. Conflicts arising from lack of coordination shall be this Contractor's responsibility. Maintain all code-required

clearances about electrical equipment. Unless specifically noted otherwise, establish the exact location of electrical equipment based on the actual dimensions of equipment furnished.

#### 1.04 WORK IN COOPERATION WITH OTHER SECTIONS

- A. Examine the drawings and specifications and determine the work to be performed by the electrical, mechanical and other sections. Provide the type and amount of electrical materials and equipment necessary to place this work in proper operation, completely wired, tested and ready for use. This shall include all conduit, wire, motor starters, disconnects, relays, time clocks and other devices for the required operation sequence of all electrical, mechanical and other systems or equipment. Where a conflict occurs on drawings, the most stringent shall apply.
- B. Provide conduit and wire for all controls and other devices, both line and low voltage, described in this or other parts of the contract documents. Install all control housings and backboxes required for installing conduit and wire to the controls.
- C. Install control wiring in separate conduit between each heating, ventilating and air conditioning sensing device and its control panel and/or control motor. Before installing any conduit for heating, ventilating and air conditioning control wiring, verify from the control manufacturer's shop drawings where these separate conduit runs are required.
- D. Plan all work so that it proceeds with a minimum of interference with other sections. Inform all parties concerned of openings required for equipment or conduit required in the building construction for Electrical Work and provide all special frames, sleeves and anchor bolts as required. Coordinate the electrical work with the mechanical installation. Promptly report to the Engineer any delay or difficulties encountered in the installation of this work which might prevent prompt and proper installation, or make it unsuitable to connect with or receive the work of other sections. Failure to so report shall constitute an acceptance of the work of other sections as being fit and proper for the execution of this work.

#### 1.05 TESTING AND ADJUSTMENT

- A. Upon completion of all Electrical Work, the contractor shall provide all testing as follows:
  - 1. Operational Test: Test all circuit breakers, receptacles, motors and all other electrical and communication equipment. Replace all faulty devices and equipment discovered during testing with new devices and equipment at no additional cost, and that part of the system (or devices or equipment) shall then be retested.
  - 2. Secondary Grounding Resistance: Perform ground continuity test between main ground system and equipment frame, system neutral and/or derived neutral point.
  - 3. Ground Fault System Test: Measure system neutral insulation resistances to ensure no shunt ground paths exist.
- B. All test procedure shall be performed by an independent testing firm.

1.06 MAINTENANCE, SERVICING AND INSTRUCTION MANUALS, AND WIRING DIAGRAMS

All wiring diagrams shall specifically cover the installed system indicating zones, wiring, and components added to the system. Typical drawings will not be accepted.

1.07 FINAL INSPECTION AND ACCEPTANCE

- A. After all requirements of these specifications and/or the Drawings have been fully completed; the Engineer will inspect the Work. The Contractor shall provide competent personnel to demonstrate the operation of any item of system, to the full satisfaction of the Engineer.
- B. Final acceptance of the work will be made by the Engineer.
- C. The Contractor shall furnish to the Engineer Record Drawings before final payment of retention.

1.08 MEASUREMENT AND PAYMENT

Separate measurement or payment will not be made for work required under this Section. All costs in connection therewith will be considered incidental to the item of work to which it pertains.

**END OF SECTION**

## **SECTION 16050**

### **BASIC ELECTRICAL MATERIALS AND METHODS**

#### **PART 1 – GENERAL**

##### **1.01 SUMMARY**

This Section includes the following:

1. Electrical identification
2. Concrete equipment bases
3. Electrical demolition
4. Cutting and patching for electrical construction

##### **1.02 SUBMITTALS**

Product Data: Electrical components, devices and accessories

##### **1.03 QUALITY ASSURANCE**

Electrical Components, Devices, and Accessories:

Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.

##### **1.04 COORDINATION**

- A. Coordinate chases, slots, inserts, sleeves, and openings for electrical supports, raceways, and cable with general construction work.
- B. Sequence, coordinate, and integrate installing electrical materials and equipment for efficient flow of the Work. Coordinate installing large equipment that requires positioning before closing in the building.
- C. Coordinate location of access panels and doors for electrical items that are concealed by finished surfaces.
- D. Where electrical identification devices are applied to field-finished surfaces, coordinate installation of identification devices with completion of finished surface.

## 1.05 MEASUREMENT AND PAYMENT

Separate measurement or payment will not be made for work required under this Section. All costs in connection therewith will be considered incidental to the item of work to which it pertains.

## PART 2 – PRODUCTS

### 2.01 SUPPORTING DEVICES

- A. Material: Cold-formed steel, with corrosion-resistant coating
- B. Metal Items for Use Outdoors or in Damp Locations: Hot-dip galvanized steel
- C. Slotted-Steel Channel: Flange edges turned toward web, and 9/16-inch-diameter slotted holes at a maximum of two inches on center, in webs. Strength rating to suit structural loading.
- D. Slotted Channel Fittings and Accessories: Recommended by the manufacturer for use with the type and size of channel with which used.  
  
Same materials as channels and angles, except metal items may be stainless steel.
- E. Raceway and Cable Supports: Manufactured clevis hangers, riser clamps, straps, threaded C-clamps with retainers, ceiling trapeze hangers, wall brackets, and spring-steel clamps or click-type hangers.
- F. Pipe Sleeves: ASTM A 53, Type E, Grade A, Schedule 40, galvanized steel, plain ends.
- G. Cable Supports for Vertical Conduit: Factory-fabricated assembly consisting of threaded body and insulating wedging plug for non-armored electrical cables in riser conduits. Plugs have number and size of conductor gripping holes as required to suit individual risers. Body constructed of malleable-iron casting with hot-dip galvanized finish.
- H. Expansion Anchors: Carbon-steel wedge or sleeve type
- I. Toggle Bolts: All-steel springhead type
- J. Powder-Driven Threaded Studs: Heat-treated steel

### 2.02 ELECTRICAL IDENTIFICATION

- A. Identification Device Colors: Use those prescribed by ANSI A13.1, NFPA 70, and these Specifications.

- B. Colored Adhesive Marking Tape for Raceways, Wires, and Cables: Self-adhesive vinyl tape, not less than 1 inch wide by 3 mils thick.
- C. Tape Markers for Conductors: Vinyl or vinyl-cloth, self-adhesive, wraparound type with preprinted numbers and letters.
- D. Color-Coding Cable Ties: Type 6/6 nylon, self-locking type. Colors to suit coding scheme.
- E. Underground Warning Tape: Permanent, bright-colored, continuous-printed, vinyl tape compounded for permanent direct-burial service, and with the following features:
  - 1. Not less than 6 inches wide by 4 mils thick.
  - 2. Embedded continuous metallic strip or core.
  - 3. Printed legend that indicates type of underground line.
- F. Engraved-Plastic Labels, Signs, and Instruction Plates: Engraving stock, melamine plastic laminate punched or drilled for mechanical fasteners 1/16-inch minimum thickness for signs up to 20 sq. in. and 1/8-inch minimum thickness for larger sizes. Engraved legend in black letters on white background.
- G. Warning and Caution Signs: Preprinted; comply with 29 CFR 1910.145, Chapter XVII. Colors, legend, and size appropriate to each application.
  - 1. Interior Units: Aluminum, baked-enamel-finish, punched or drilled for mechanical fasteners.
  - 2. Exterior Units: Weather-resistant, non-fading, preprinted, cellulose-acetate butyrate with 0.0396-inch, galvanized-steel backing, and 1/4-inch grommets in corners for mounting.
- H. Fasteners for Nameplates and Signs: Self-tapping, stainless-steel screws or No. 10/32 stainless-steel machine screws with nuts and flat and lock washers.
- I. Electrical Outlets: Dymo labels, self adhesive

## **PART 3 – EXECUTION**

### **3.01 EQUIPMENT INSTALLATION**

- A. Headroom Maintenance: If mounting heights or other location criteria are not indicated, arrange and install components and equipment to provide maximum possible headroom.



- B. Materials and Components: Install level, plumb, and parallel and perpendicular to other building systems and components, unless otherwise indicated.
- C. Equipment: Install to facilitate service, maintenance, and repair or replacement of components. Connect for ease of disconnecting, with minimum interference with other installations.
- D. Right of Way: Give to raceways and piping systems installed at a required slope.

### 3.02 ELECTRICAL SUPPORTING DEVICE APPLICATION

- A. Damp Locations and Outdoors: Hot-dip galvanized materials or nonmetallic, slotted channel system components.
- B. Dry Locations: Steel materials.
- C. Strength of Supports: Adequate to carry present and future loads, times a safety factor of at least four with, 200-lb minimum design load for each support element.

### 3.03 SUPPORT INSTALLATION

- A. Support parallel runs of horizontal raceways together on trapeze- or bracket-type hangers.
- B. Size supports for multiple raceways or cables runs so capacity can be increased by a 25 percent minimum in the future.
- C. Support individual horizontal single raceways with separate, malleable-iron pipe hangers or clamps except use spring-steel fasteners for 1-1/2-inch and smaller single raceways above suspended ceilings and for fastening raceways to slotted channel and angle supports.
- D. Install sleeves for cable and raceway penetrations of concrete slabs and walls unless core-drilled holes are used. Install sleeves for cable and raceway penetrations of masonry and fire-rated gypsum walls and of all other fire-rated floor and wall assemblies. Install sleeves during erection of concrete and masonry walls.
- E. Secure electrical items and their supports to building structure, using the following methods unless other fastening methods are indicated:
  - 1. Wood: Wood screws or screw-type nails.
  - 2. Gypsum Board: Toggle bolts. Seal around sleeves with joint compound, both sides of wall.
  - 3. Masonry: Toggle bolts on hollow block and expansion bolts on solid block. Seal around sleeves with mortar, both sides of wall.

4. New Concrete: Concrete inserts with machine screws and bolts.
5. Existing Concrete: Expansion bolts.
6. Structural Steel: Spring-tension clamps.
  - a. Comply with AWS D1.1 for field welding.
  - b. Not used.
7. Light Steel Framing: Sheet metal screws.
8. Fasteners for Damp, Wet, or Weather-Exposed Locations: Stainless steel.
9. Light Steel: Sheet-metal screws.
10. Fasteners: Select so load applied to each fastener does not exceed 25 percent of its proof-test load.

#### 3.04 IDENTIFICATION MATERIALS AND DEVICES

- A. Install at locations for most convenient viewing without interference with operation and maintenance of equipment.
- B. Coordinate names, abbreviations, colors, and other designations used for electrical identification with corresponding designations indicated in the Contract Documents or required by codes and standards. Use consistent designations throughout Project.
- C. Self-Adhesive Identification Products: Clean surfaces before applying.
- D. Tag and label circuits designated to be extended in the future. Identify source and circuit numbers in each cabinet, pull and junction box, and outlet box. Color-coding may be used for voltage and phase identification.
- E. Install continuous underground plastic markers during trench backfilling, for exterior underground power, control, signal, and communication lines located directly above power and communication lines. Locate 6 to 8 inches below finished grade. If width of multiple lines installed in a common trench or concrete envelope does not exceed 16 inches, overall, use a single line marker.
- F. Install warning, caution, and instruction signs where required to comply with 29 CFR 1910.145, Chapter XVII, and where needed to ensure safe operation and maintenance of electrical systems and of items to which they connect. Indoors install engraved plastic-laminated instruction signs with approved legend where instructions are needed for system or equipment operation. Install metal-backed butyrate signs for outdoor items.

- G. Install engraved-laminated emergency-operating signs with white letters on red background with minimum 3/8-inch- high lettering for emergency instructions on power transfer, load shedding, and other emergency operations.

### 3.05 FIRESTOPPING

Apply firestopping to cable and raceway sleeves and other penetrations of fire-rated floor and wall assemblies to restore original undisturbed fire-resistance ratings of assemblies.

### 3.06 CONCRETE BASES

Construct concrete bases of dimensions indicated, but not less than 4 inches larger, in both directions, than supported unit. Follow supported equipment manufacturer's anchorage recommendations and setting templates for anchor-bolt and tie locations, unless otherwise indicated.

### 3.07 DEMOLITION

- A. Protect existing electrical equipment and installations indicated to remain. If damaged or disturbed in the course of the Work, remove damaged portions and install new products of equal capacity, quality, and functionality.
- B. Accessible Work: Remove exposed electrical equipment and installations, indicated to be demolished, in their entirety.
- C. Abandoned Work: Cut and remove buried raceway and wiring, indicated to be abandoned in place, two inches below the surface of adjacent construction. Cap raceways and patch surface to match existing finish.
- D. Remove, store, clean, reinstall, reconnect, and make operational components indicated for relocation.

### 3.08 CUTTING AND PATCHING

- A. Cut, channel, chase, and drill floors, walls, partitions, ceilings, and other surfaces required to permit electrical installations. Perform cutting by skilled mechanics of trades involved.
- B. Repair, refinish and touch up disturbed finish materials and other surfaces to match adjacent undisturbed surfaces.

**END OF SECTION**

## **SECTION 16060**

### **MINOR ELECTRICAL DEMOLITION**

#### **PART 1 – GENERAL**

##### **1.01 SECTION INCLUDES**

Electrical demolition

##### **1.02 RELATED SECTIONS**

- A. Section 02230 – DEMOLITION, SITE CLEARING AND MOBILIZATION
- B. Section 02810 – IRRIGATION SYSTEM
- C. Section 02825 – ORNAMENTAL STEEL FENCE SYSTEM, INDUSTRIAL
- D. Section 02826 – ORNAMENTAL STEEL FENCE, ENTRY GATE OPERATOR

#### **PART 2 – PRODUCTS**

##### **2.01 MATERIALS AND EQUIPMENT**

Materials and equipment for patching and extending work as specified in individual Sections.

#### **PART 3 – EXECUTION**

##### **3.01 EXAMINATION**

- A. Verify field measurements and circuiting arrangements are as shown on Drawings.
- B. Verify that abandoned wiring and equipment serve only abandoned facilities.
- C. Demolition Drawings are based on actual field observation and existing record drawings. The Contractor shall report discrepancies to the Engineer before disturbing existing conditions.
- D. Beginning of demolition means installer accepts existing conditions.

##### **3.02 PREPARATION**

- A. Disconnect electrical systems in walls, floors, and ceilings scheduled for removal.
- B. Coordinate utility service outages with Utility Company.
- C. Provide temporary wiring and connections to maintain existing systems in service during construction. When work must be performed on energized equipment or circuits use personnel experienced in such operations.

- D. Existing Electrical Service: Maintain existing system in service until new system is complete and ready for service. Disable system only to make switchovers and connections. Obtain permission from District seven days before partially or completely disabling system. Minimize outage duration. Make temporary connections to maintain service in areas adjacent to work area.
- E. Existing Fire Alarm System: Maintain existing system in service until new system is accepted. Disable system only to make switchovers and connections. Notify Engineer, and local fire service] at least seven days before partially or completely disabling system. Minimize outage duration. Make temporary connections to maintain service in areas adjacent to work area.
- F. Existing Telephone System: Maintain existing system in service until new system is complete and ready for service. Disable system only to make switchovers and connections. Notify Engineer and Telephone Utility Company at least seven days before partially or completely disabling system. Minimize outage duration. Make temporary connections to maintain service in areas adjacent to work area.
- G. Existing System: Maintain existing system in service until new system is complete and ready for service. Disable system only to make switchovers and connections. Obtain permission from Engineer at least seven days hours before partially or completely disabling system. Minimize outage duration. Make temporary connections to maintain service in areas adjacent to work area.

### 3.03 DEMOLITION AND EXTENSION OF EXISTING ELECTRICAL WORK

- A. Demolish and extend existing electrical work under provisions under provision of this Section.
- B. Remove, relocate, and extend existing installations to accommodate new construction.
- C. Remove abandoned wiring to source of supply.
- D. Remove exposed abandoned conduit, including abandoned conduit above accessible ceiling finishes. Cut conduit flush with walls and floors, and patch surfaces.
- E. Disconnect abandoned outlets and remove devices. Remove abandoned outlets if conduit servicing them is abandoned and removed. Provide blank cover for abandoned outlets that are not removed.
- F. Disconnect and remove abandoned panelboards and distribution equipment.
- G. Disconnect and remove electrical devices and equipment serving utilization equipment that has been removed.
- H. Disconnect and remove abandoned luminaries. Remove brackets, stems, hangers, and other accessories.

- I. Repair adjacent construction and finishes damaged during demolition and extension work.
- J. Maintain access to existing electrical installations which remain active. Modify installation or provide access panel as appropriate.
- K. Extend existing installations using materials and methods compatible with existing electrical installations, or as specified.

#### 3.04 CLEANING AND REPAIR

- A. Clean and repair existing materials and equipment which remain or are to be reused.
- B. Panelboards: Clean exposed surfaces and check tightness of electrical connections. Replace damaged circuit breakers and provide closure plates for vacant positions. Provide typed circuit directory showing revised circuiting arrangement.
- C. Luminaries: Remove existing luminaries for cleaning. Use mild detergent to clean all exterior and interior surfaces; rinse with clean water and wipe dry. Replace lamps, ballasts, and broken electrical parts.

**END OF SECTION**

**SECTION 16130**  
**RACEWAYS AND BOXES**

**PART 1 – GENERAL**

**1.01 SUMMARY**

This Section includes raceways, fittings, boxes, enclosures, and cabinets for electrical wiring.

**1.02 RELATED SECTIONS**

- A. Section 02810 – IRRIGATION SYSTEM
- B. Section 02825 – ORNAMENTAL STEEL FENCE SYSTEM, INDUSTRIAL
- C. Section 02826 – ORNAMENTAL STEEL FENCE, ENTRY GATE OPERATOR
- D. Section 13126 – PREFABRICATED GUARD HOUSE

**1.03 SUBMITTALS**

- A. Conduit Schedule
- B. Product Data: For surface raceways, wireways and fittings, floor boxes, hinged-cover enclosures, and cabinets indicated.

**1.04 QUALITY ASSURANCE**

- A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.
- B. Comply with NFPA 70.

**1.05 MEASUREMENT AND PAYMENT**

Separate measurement or payment will not be made for work required under this Section. All costs in connection therewith will be considered incidental to the item of work to which it pertains.

**PART 2 – PRODUCTS**

**2.01 MANUFACTURERS**

In other Part 2 articles where subparagraph titles below introduce lists, the following requirements apply for product selection:

Manufacturers: Subject to compliance with requirements, provide products by the manufacturers specified.

## 2.02 METAL CONDUIT AND TUBING

### A. Manufacturers:

1. AFC Cable Systems, Inc.
2. Alflec Inc.
3. Anamet Electrical, Inc.; Anaconda Metal Hose.
4. Electri-Flex Co.
5. Grinnell Co./Tyco International; Allied Tube and Conduit Div.
6. LTV Steel Tubular Products Company.
7. Manhattan/CDT/Cole-Flex.
8. O-Z Gedney; Unit of General Signal.
9. Wheatland Tube Co.
10. Or approved equal.

### B. Rigid Steel Conduit: ANSI C80.1.

### C. Aluminum Rigid Conduit: ANSI C80.5.

### D. IMC: ANSI C80.6.

### E. EMT and Fittings: ANSI C80.3.

Fittings: Compression type.

### F. FMC: Aluminum.

### G. LFMC: Flexible steel conduit with PVC jacket.

### H. Fittings: NEMA FB 1; compatible with conduit and tubing materials.

## 2.03 NONMETALLIC CONDUIT AND TUBING

### A. Manufacturers:

1. American International.
2. Anamet Electrical, Inc.; Anaconda Metal Hose.
3. Arnco Corp.
4. Cantex Inc.



5. Certainteed Corp.; Pipe & Plastics Group.
6. Condux International.
7. ElecSYS, Inc.
8. Electri-Flex Co.
9. Lamson & Sessions; Carlon Electrical Products.
10. Manhattan/CDT/Cole-Flex.
11. RACO; Division of Hubbell, Inc.
12. Spiralduct, Inc./AFC Cable Systems, Inc.
13. Thomas & Betts Corporation.
14. Or approved equal.

B. RNC: NEMA TC 2, Schedule 40 and Schedule 80 PVC.

C. RNC Fittings: NEMA TC 3; match to conduit or tubing type and material.

#### 2.04 SURFACE RACEWAYS

A. Surface Metal Raceways: Galvanized steel with snap-on covers. Finish with manufacturer's standard prime coating.

Manufacturers:

- a. Airey-Thompson Sentinel Lighting; Wiremold Co.
- b. Thomas & Betts Corporation.
- c. Walker Systems, Inc.; Wiremold Co.
- d. Wiremold Company; Electrical Sales Division
- e. Or approved equal.

B. Types, sizes, and channels as indicated and required for each application, with fittings that match and mate with raceways.

#### 2.05 BOXES, ENCLOSURES, AND CABINETS

A. Manufacturers:

1. Cooper Crouse-Hinds; Div. of Cooper Industries, Inc.
2. Emerson/General Signal; Appleton Electric Co.

#### RACEWAYS AND BOXES

3. Erickson Electrical Equipment Co.
  4. Hoffman.
  5. Hubbell, Inc.; Killark Electric Manufacturing Co.
  6. O-Z/Gedney; Unit of General Signal.
  7. RACO; Division of Hubbell, Inc.
  8. Robroy Industries, Inc.; Enclosure Division
  9. Or approved equal.
- B. Sheet Metal Outlet and Device Boxes: NEMA OS 1
- C. Cast-Metal Outlet and Device Boxes: NEMA FB 1, Type FD, with gasketed cover
- D. Nonmetallic Outlet and Device Boxes: NEMA OS 2
- E. Floor Boxes: Cast metal, fully adjustable, rectangular
- F. Small Sheet Metal Pull and Junction Boxes: NEMA OS 1
- G. Cast-Metal Pull and Junction Boxes: NEMA FB 1, cast aluminum with gasketed cover
- H. Hinged-Cover Enclosures: NEMA 250, Type 1, with continuous hinge cover and flush latch
- Metal Enclosures: Steel, finished inside and out with manufacturer's standard enamel
- I. Cabinets: NEMA 250, Type 1, galvanized steel box with removable interior panel and removable front, finished inside and out with manufacturer's standard enamel. Hinged door in front cover with flush latch and concealed hinge. Key latch to match panelboards. Include metal barriers to separate wiring of different systems and voltage and include accessory feet where required for freestanding equipment.

## 2.06 FACTORY FINISHES

Finish: For raceway, enclosure, or cabinet components, provide manufacturer's standard prime-coat finish ready for field painting.

## PART 3 – EXECUTION

### 3.01 RACEWAY APPLICATION

- A. Outdoors:

1. Exposed: Rigid steel or IMC.
2. Concealed: Rigid steel or IMC.
3. Underground, Single Run: RNC.
4. Underground, Grouped: RNC.
5. Connection to Vibrating Equipment (Including Transformers and Hydraulic, Pneumatic, Electric Solenoid, or Motor-Driven Equipment): LFMC.
6. Boxes and Enclosures: NEMA 250, Type 3R.

B. Indoors:

1. Exposed: EMT.
2. Concealed: EMT.
3. Connection to Vibrating Equipment (Including Transformers and Hydraulic, Pneumatic, Electric Solenoid, or Motor-Driven Equipment): FMC; except use LFMC in damp or wet locations.
4. Damp or Wet Locations: Rigid steel conduit
5. Boxes and Enclosures: NEMA 250, Type 1, except as follows:  
Damp or Wet Locations: NEMA 250, Type 4, stainless steel.

C. Minimum Raceway Size: 3/4-inch trade size

D. Raceway Fittings: Compatible with raceways and suitable for use and location.

1. Intermediate Steel Conduit: Use threaded rigid steel conduit fittings, unless otherwise indicated.
2. PVC Externally Coated, Rigid Steel Conduits: Use only fittings approved for use with that material. Patch all nicks and scrapes in PVC coating after installing conduits.

E. Do not install aluminum conduits embedded in or in contact with concrete.

### 3.02 INSTALLATION

- A. Keep raceways at least 6 inches away from parallel runs of flues and steam or hot-water pipes. Install horizontal raceway runs above water and steam piping.
- B. Complete raceway installation before starting conductor installation.

- C. Support raceways as specified in Section 16050: Basic Electrical Materials and Methods.
- D. Install temporary closures to prevent foreign matter from entering raceways.
- E. Protect stub-ups from damage where conduits rise through floor slabs. Arrange so curved portions of bends are not visible above finished slab.
- F. Make bends and offsets so ID is not reduced. Keep legs of bends in same plane and keep straight legs of offsets parallel, unless otherwise indicated.
- G. Conceal conduit and EMT within finished walls, ceilings, and floors, unless otherwise indicated.

Install concealed raceways with a minimum of bends in shortest practical distance, considering type of building construction and obstructions, unless otherwise indicated.

- H. Raceways Embedded in Slabs: Install in middle 1/3 of slab thickness where practical and leave at least 2 inches of concrete cover.
  - 1. Secure raceways to reinforcing rods to prevent sagging or shifting during concrete placement.
  - 2. Space raceways laterally to prevent voids in concrete.
  - 3. Run conduit larger than 1-inch trade size parallel or at right angles to main reinforcement. Where at right angles to reinforcement, place conduit close to slab support.
  - 4. Change from nonmetallic tubing to Schedule 80 nonmetallic conduit, rigid steel conduit, or IMC before rising above floor.
- I. Install exposed raceways parallel or at right angles to nearby surfaces or structural members and follow surface contours as much as possible.
  - 1. Run parallel or banked raceways together on common supports.
  - 2. Make parallel bends in parallel or banked runs. Use factory elbows only where elbows can be installed parallel; otherwise, provide field bends for parallel raceways.
- J. Join raceways with fittings designed and approved for that purpose and make joints tight.

Use insulating bushings to protect conductors on all raceways 2" and larger.
- K. Tighten set screws of threadless fittings with suitable tools.
- L. Terminations:

1. Where raceways are terminated with locknuts and bushings, align raceways to enter squarely and install locknuts with dished part against box. Use two locknuts, one inside and one outside box.
  2. Where raceways are terminated with threaded hubs, screw raceways or fittings tightly into hub so end bears against wire protection shoulder. Where chase nipples are used, align raceways so coupling is square to box; tighten chase nipple so no threads are exposed.
- M. Install pull wires in empty raceways. Use polypropylene or monofilament plastic line with not less than 200-lb tensile strength. Leave at least 12 inches of slack at each end of pull wire.
- N. Telephone and signal system raceways, 2-inch trade size and smaller: In addition to above requirements, install raceways in maximum lengths of 150 feet and with a maximum of two 90-degree bends or equivalent. Separate lengths with pull or junction boxes where necessary to comply with these requirements.
- O. Install raceway sealing fittings at suitable, approved, and accessible locations and fill them with UL-listed sealing compound. For concealed raceways, install each fitting in a flush steel box with a blank cover plate having a finish similar to that of adjacent plates or surfaces. Install raceway sealing fittings at the following points:
1. Where conduits pass from warm to cold locations, such as boundaries of refrigerated spaces.
  2. Where otherwise required by NFPA 70.
- P. Stub-up Connections: Extend conduits through concrete floor for connection to freestanding equipment. Install with an adjustable top or coupling threaded inside for plugs set flush with finished floor. Extend conductors to equipment with rigid steel conduit; FMC may be used six inches above the floor. Install screwdriver-operated, threaded plugs flush with floor for future equipment connections.
- Q. Flexible Connections: Use maximum of 72 inches of flexible conduit for recessed and semi-recessed lighting fixtures; for equipment subject to vibration, noise transmission, or movement; and for all motors. Use LFMC in damp or wet locations. Install separate ground conductor across flexible connections.
- R. Surface Raceways: Install a separate, green, ground conductor in raceways from junction box supplying raceways to receptacle or fixture ground terminals.
- S. Set floor boxes level and flush with finished floor surface.
- T. Install hinged-cover enclosures and cabinets plumb. Support at each corner.

### 3.03 PROTECTION

- A. Provide final protection and maintain conditions that ensure coatings, finishes, and cabinets are without damage or deterioration at time of Substantial Completion.
- B. Repair damage to galvanized finishes with zinc-rich paint recommended by manufacturer.
- C. Repair damage to PVC or paint finishes with matching touchup coating recommended by manufacturer.

**END OF SECTION**

## **SECTION 16140**

### **WIRING DEVICES**

#### **PART 1 – GENERAL**

##### **1.01 SUMMARY**

This Section includes the following:

1. Single and duplex receptacles, ground-fault circuit interrupters
2. Single- and double-pole snap switches
3. Device wall plates

##### **1.02 RELATED SECTIONS**

- A. Section 02810 – IRRIGATION SYSTEM
- B. Section 02825 – ORNAMENTAL STEEL FENCE SYSTEM, INDUSTRIAL
- C. Section 02826 – ORNAMENTAL STEEL FENCE, ENTRY GATE OPERATOR
- D. Section 13126 – PREFABRICATED GUARD HOUSE

##### **1.03 SUBMITTALS**

Submit product data for each type of product indicated.

##### **1.04 QUALITY ASSURANCE**

- A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.
- B. Comply with NFPA 70.

##### **1.05 MEASUREMENT AND PAYMENT**

Separate measurement or payment will not be made for work required under this Section. All costs in connection therewith will be considered incidental to the item of work to which it pertains.

#### **PART 2 – PRODUCTS**

##### **2.01 MANUFACTURERS**

Manufacturers subject to compliance with requirements, provide products by one of the following wiring devices:

- a. Bryant Electric, Inc. / Hubbell Subsidiary
- b. Eagle Electric Manufacturing Co.
- c. Hubbell Incorporated; Wiring Device-Kellems
- d. Leviton Manufacturing Co.
- e. Pass & Seymour/Legrand; Wiring Devices Division
- f. Or approved equal.

## 2.02 RECEPTACLES

- A. Straight-Blade-Type Receptacles: Comply with NEMA WD 1, NEMA WD 6, DSCC W-C-596G, and UL 498.
- B. Straight-Blade and Locking Receptacles: Heavy-Duty grade
- C. GFCI Receptacles: Straight blade, non-feed-through type, Hospital or Heavy-Duty grade, with integral NEMA WD 6, Configuration 5-20R duplex receptacle; complying with UL 498 and UL 943. Design units for installation in a 2-3/4-inch- deep outlet box without an adapter.

## 2.03 SWITCHES

- A. Single- and Double-Pole Switches: Comply with DSCC W-C-896F and UL 20.
- B. Snap Switches: Heavy-Duty grade, quiet type.
- C. Combination Switch and Receptacle: Both devices in a single gang unit with plaster ears and removable tab connector that permit separate or common feed connection.
  - 1. Switch: 20 A, 120/277-V ac.
  - 2. Receptacle: NEMA WD 6, Configuration 5-15R.

## 2.04 WALL PLATES

Single and combination types to match corresponding wiring devices:

- A. Plate-Securing Screws: Metal with head color to match plate finish
- B. Material for Finished Spaces: 0.035-inch- thick, satin-finished stainless steel
- C. Material for Wet Locations: Cast aluminum with spring-loaded lift cover, and listed and labeled for use in "wet locations."

## 2.05 FINISHES



Color Wiring Devices Connected to Normal Power System: As selected by the Engineer, unless otherwise indicated or required by NFPA 70.

### **PART 3 – EXECUTION**

#### **3.01 INSTALLATION**

- A. Install devices and assemblies level, plumb, and square with building lines.
- B. Arrangement of Devices: Unless otherwise indicated, mount flush, with long dimension vertical, and with grounding terminal of receptacles on bottom. Group adjacent switches under single, multigang wall plates.
- C. Remove wall plates and protect devices and assemblies during painting.

#### **3.02 IDENTIFICATION**

Comply with Section 16050: Basic Electrical Materials and Methods.

Receptacles: Identify panelboard and circuit number from which served. Use hot, stamped or engraved machine printing with black-filled lettering on face of plate, and durable wire markers or tags inside outlet boxes.

#### **3.03 FIELD QUALITY CONTROL**

- A. Perform the following field tests and inspections:
  - 1. After installing wiring devices and after electrical circuitry has been energized, test for proper polarity, ground continuity, and compliance with requirements.
  - 2. Test GFCI operation with both local and remote fault simulations according to manufacturer's written instructions.
- B. Remove malfunctioning units, replace with new units, and retest as specified above.

**END OF SECTION**

## **SECTION 16530**

### **SITE LIGHTING**

#### **PART 1 – GENERAL**

##### **1.01 SECTION INCLUDES**

- A. Exterior luminaries and accessories
- B. Poles

##### **1.02 RELATED SECTIONS**

- A. Section 02825 – ORNAMENTAL STEEL FENCE SYSTEM, INDUSTRIAL
- B. Section 02826 – ORNAMENTAL STEEL FENCE, ENTRY GATE OPERATOR
- C. Section 13126 – PREFABRICATED GUARD HOUSE

##### **1.03 REFERENCES**

- A. ANSI C78.379 - Electric Lamps - Incandescent and High-Intensity Discharge Reflector Lamps - Classification of Beam Patterns
- B. ANSI C82.4 - Ballasts for High-Intensity-Discharge and Low-Pressure Sodium Lamps (Multiple-Supply Type)
- C. ANSI/IES RP-8 - Recommended Practice for Roadway Lighting
- D. ANSI/IES RP-20 - Lighting for Parking Facilities

##### **1.04 SUBMITTALS**

Provide To Engineer:

- A. Shop Drawings: Indicate dimensions and components for each luminary which is not a standard product of the manufacturer.
- B. Product Data: Provide dimensions, ratings, and performance data.
- C. Design Data: Include lighting calculations.
- D. Test Reports: Indicate measured illumination levels.
- E. Manufacturer's Instructions: Indicate application conditions and limitations of use stipulated by product testing agency specified under "Regulatory Requirements".
- F. Manufacturer's Instructions: Include instructions for storage, handling, protection, examination, preparation, installation, and starting of product.

#### 1.05 PROJECT RECORD DOCUMENTS

Accurately record actual locations of each luminary.

#### 1.06 OPERATION AND MAINTENANCE DATA

Maintenance Data: Include instructions to Engineer for maintaining luminaries.

#### 1.07 DELIVERY, STORAGE, AND HANDLING

- A. Accept products on site. Inspect for damage.
- B. Protect poles from finish damage by handling carefully.
- C. Store and handle solid wood poles in accordance with ANSI O5.1.

#### 1.08 COORDINATION

Furnish bolt templates and pole mounting accessories to installer of pole foundations.

#### 1.09 MEASUREMENT AND PAYMENT

Full compensation for furnishing all labor, materials, tools, equipment and incidentals and for doing all the work involved in placing, removing, storing, maintaining, moving to new locations, replacing, and disposing of the components of the Site lighting as shown on the plans; and doing all other work as specified in this Section and applicable standards as referenced therein as specified in the applicable portions of these Specifications, and as directed by the Engineer, will be paid for at the lump sum price bid for SITE LIGHTING, Bid Item No. 33.

### **PART 2 – PRODUCTS**

#### 2.01 LUMINAIRES

Furnish products as specified in schedule on Drawings E-1 & E-2.

#### 2.02 LAMPS

High Intensity Discharge (HID) Lamp Manufacturers:

- 1. General Electric
- 2. Sylvania
- 3. Phillips
- 4. Or approved equal.

Backfilling, survey work, preparation of subgrade to proper grade, and compaction required for constructing new concrete curbs shall be incidental to this Bid item.

## **PART 3 – EXECUTION**

### **3.01 EXAMINATION**

- A. Examine excavation and concrete foundation for lighting poles.
- B. Examine each luminary to determine suitability for lamps specified.

### **3.02 INSTALLATION**

- A. Install in accordance with manufacturers' instructions.
- B. Install lighting poles at locations indicated.
- C. Install poles plumb. Provide double nuts to adjust plumb. Grout around each base.
- D. Install lamps in each luminary.
- E. Bond luminaries metal accessories and metal poles to branch circuit equipment grounding conductor.

### **3.03 FIELD QUALITY CONTROL**

- A. Operate each luminary after installation and connection. Inspect for improper connections and operation.
- B. Measure illumination levels to verify conformance with performance requirements.
- C. Take measurements during night sky, without moon or with heavy overcast clouds effectively obscuring moon.

### **3.04 ADJUSTING**

- A. Aim and adjust luminaries to provide illumination levels and distribution as directed.
- B. Re-lamp luminaries which have failed lamps at Date of Substantial Completion.

### **3.05 CLEANING**

- A. Clean electrical parts to remove conductive and deleterious materials.
- B. Remove dirt and debris from enclosure.
- C. Clean photometric control surfaces as recommended by manufacturer.
- D. Clean finishes and touch up damage.

**END OF SECTION**

## **SECTION 16744**

### **TELEPHONE DISTRIBUTION SYSTEMS, OUTSIDE PLANT**

#### **PART 1 – GENERAL**

##### **1.01 RELATED SECTIONS**

- A. Section 02810 – IRRIGATION SYSTEM
- B. Section 02825 – ORNAMENTAL STEEL FENCE SYSTEM, INDUSTRIAL
- C. Section 02826 – ORNAMENTAL STEEL FENCE, ENTRY GATE OPERATOR
- D. Section 13126 – PREFABRICATED GUARD HOUSE

##### **1.02 REFERENCES**

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by the basic designation only.

- A. AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)  
ANSI C2 - 1993 National Electrical Safety Code
- B. AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)
  - 1. ASTM B 1 - 1990 Hard-Drawn Copper Wire
  - 2. ASTM B 8 - 1990 Concentric-Lay-Stranded Copper Conductors, Hard, Medium-Hard, or Soft
  - 3. ASTM D 256 - 1992 Impact Resistance of Plastics and Electrical Insulating Materials
  - 4. ASTM D 570 - 1981 (R 1988) Water Absorption of Plastics
  - 5. ASTM D 635 - 1991 Rate of Burning and/or Extent and Time of Burning of Self-Supporting Plastics in a Horizontal Position
  - 6. ASTM D 638 - 1991 Tensile Properties of Plastics
  - 7. ASTM D 695 - 1991 Compressive Properties of Rigid Plastics
  - 8. ASTM D 790 - 1992 Flexural Properties of Unreinforced and Reinforced Plastics and Electrical Insulating Materials
  - 9. ASTM D 1557 - 1991 Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft (2,700 kN-m/m))
  - 10. ASTM D 2444 - 1993 Impact Resistance of Thermoplastic Pipe and Fittings by Means of a Tup (Falling Weight)

TELEPHONE DISTRIBUTION SYSTEMS, OUTSIDE PLANT

11. ASTM D 2563 - 1970 (R 1987) Classifying Visual Defects in Glass-Reinforced Plastic Laminate Parts
12. ASTM E 111 - 1982 (R 1988) Young's Modulus, Tangent Modulus, and Chord Modulus

C. NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION (NEMA)

1. NEMA RN 1 - 1989 Polyvinyl-Chloride (PVC) Externally Coated Galvanized Rigid Steel Conduit and Intermediate Metal Conduit
2. NEMA TC 2 - 1990 Electrical Plastic Tubing (EPT) and Conduit (EPC-40 and EPC-80)
3. NEMA TC 3 - 1990 PVC Fittings for Use with Rigid PVC Conduit and Tubing
4. NEMA TC 6 - 1990 PVC and ABS Plastic Utilities Duct for Underground Installation
5. NEMA TC 9 - 1990 Fittings for ABS and PVC Plastic Utilities Duct for Underground Installation

D. NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)

NFPA 70 - 1993 National Electrical Code

E. RURAL ELECTRIFICATION ADMINISTRATION (REA)

1. REA 345-6 - 1978 Splicing Plastic-Insulated Cables (PC-2)
2. REA 345-22 - 1989 Voice Frequency Loading Coils (PE-26)
3. REA 345-50 - 1979 Trunk Carrier Systems (PE-60)
4. REA 345-65 - 1985 Shield Bonding Connectors (PE-33)
5. REA 345-67 - 1987 Filled Telephone Cables (PE-39)
6. REA 345-72 - 1985 Filled Splice Closures (PE-74)
7. REA 345-165 - 1989 Digital Stored Program Controlled Central Office Equipment (Form 522)
8. REA 1755I-100 - 1993 List of Materials Acceptable for Use on Telephone Systems of REA Borrowers
9. REA TECM 644 - 1983 Design and Construction of Underground Cable
10. REA TECM 823 - 1980 Electrical Protection by Use of Gas Tube Arrestors

F. UNDERWRITERS LABORATORIES INC. (UL)

TELEPHONE DISTRIBUTION SYSTEMS, OUTSIDE PLANT

16744 - 2

1. UL 6 - 1993 (Bul. 1993) Rigid Metal Conduit
2. UL 83 - 1991 (Bul. 1991, 1992, and 1993) (R 1993) Thermoplastic-Insulated Wires and Cables
3. UL 497 - 1991 (R 1992) Safety Protector for Paired Conductor Communication Circuit
4. UL 510 - 1986 (R 1986) Insulating Tape
5. UL 514A - 1983 (R 1993) (Bul. 1993) Metallic Outlet Boxes
6. UL 1242 - 1983 (R 1993) (Bul. 1993) Intermediate Metal Conduit

### 1.03 SUBMITTALS

Submit the following to the Engineer:

A. SD-02, Manufacturer's Catalog Data:

1. Wire and cable
2. Cable splices, and connectors
3. Closures
4. Cross-connect terminal cabinets

B. SD-04, Drawings: Telephone distribution system

Telephone Distribution System: Submit shop drawing complete with wiring and schematic diagrams and any details required to demonstrate that cable system has been coordinated and will properly support the switching and transmission system identified in specification and drawings. Drawings shall show proposed layout and anchorage of equipment and appurtenances, and equipment relationship to other parts of the work including clearances for operations and maintenance. System drawings shall show final configuration, including location, gage, pair, duct and innerduct arrangement, or conductor assignment of outside plant, and protector and connector blocks layout at termination points after installation.

C. SD-06, Instructions:

Installation Procedures: Where installation procedures, or any part thereof, are required to be in accordance with manufacturer's instructions, submit these instructions to the Engineer prior to installation of the equipment.

D. SD-08, Statements:

Cable Splicer's Qualifications: Submit for approval, 30 days before splices are to be made on the cable. Certification shall include the training, and experience of the individual on specific type and classification of cable to be provided under this contract.

E. SD-12, Field Test Reports:

TELEPHONE DISTRIBUTION SYSTEMS, OUTSIDE PLANT

1. Pre-installation tests
2. Acceptance tests

#### 1.04 DELIVERY, STORAGE, AND HANDLING

Ship cable on reels with a minimum overage of 10 percent. Radius of the reel drum shall not be smaller than the minimum bend radius of the cable. Wind cable on the reel so that unwinding can be done without kinking the cable. Ten feet of cable at both ends of the cable shall be accessible for testing. Attach permanent label on each reel showing length, cable identification number, cable size, cable type, and date of manufacture. Provide water-resistant label and the indelible writing on the labels. Apply end seals to each end of the cables to prevent moisture from entering the cable. Reels with cable shall be suitable for outside storage conditions when temperature ranges from minus 40 degrees C to plus 65 degrees C, with relative humidity from 0 to 100 percent. Equipment, other than cable, delivered and placed in storage shall be stored with protection from weather, humidity and temperature variation, dirt and dust, or other contaminants.

#### 1.05 MEASUREMENT AND PAYMENT

The contract lump sum price paid for telecommunication system work includes full compensation for furnishing all labor, materials, tools, equipment and incidentals and for doing all the work involved in placing, removing, storing, maintaining, moving to new locations, replacing, and disposing of the components of the telecommunication system as shown on the plans; and doing all other work as specified in this Section and applicable standards as referenced therein as specified in the applicable portions of these Specifications, and as directed by the Engineer, will be paid for TELECOMMUNICATIONS SYSTEM, Bid Item No. 31.

Backfilling, survey work, preparation of subgrade to proper grade, and compaction required for constructing new concrete curbs shall be incidental to this Bid item.

### **PART 2 – PRODUCTS**

#### 2.01 MATERIALS AND EQUIPMENT

Materials and equipment shall be the standard products of a manufacturer regularly engaged in the manufacture of such products and shall be the manufacturer's latest standard design.

#### 2.02 CLOSURES

##### A. Copper Conductor Closures

##### 1. Underground Cable Closures

In Vault or Manhole: Underground closure suitable to house a straight, butt, and branch splice in a protective housing into which can be poured an encapsulating compound. Closure shall be of suitable thermoplastic, thermoset, or stainless steel material supplying structural strength necessary to pass the mechanical and electrical requirements in a vault or manhole environment. Encapsulating compound shall be re-enterable and shall not alter the



chemical stability of the closure. Filled splice cases shall comply with REA 345-72.

B. Fiber Optic Closures

1. In Vault or Manhole

Underground closure suitable to house splicer organizer in a protective housing into which can be poured an encapsulating compound. Closure shall be of thermoplastic, thermoset, or stainless steel material supplying structural strength necessary to pass the mechanical and electrical requirements in a vault or manhole environment. Encapsulating compound shall be re-enterable and shall not alter the chemical stability of the closure.

2.03 CABLE SPLICES AND CONNECTORS

- A. Copper Cable Splices: Splices shall consist of a moisture resistant connector held rigidly in place to assure maximum continuity. Provide correct connector size to accommodate the cable gage of the supplied cable. Connector shall be listed in REA 1755I-100.
- B. Connector: Splice connectors shall have polycarbonate body and cap with a tin-plated brass contact element. Connector shall accommodate 22 to 26 AWG solid wire with a maximum insulation diameter of 0.06 inch. Fill connector with sealant grease to make a moisture resistant connection, complying with REA 1755I-100.
- C. Shield Connectors: Connectors shall make a stable, low-impedance electrical connection between the cable shield and the bonding conductor. Connector shall comply with REA 345-65.

2.04 PLASTIC INSULATING TAPE

UL 510

2.05 WIRE AND CABLE

- A. Copper Conductor Cable: Solid copper conductors, covered with an extruded solid insulating compound. Insulated conductors shall be twisted into pairs which are then stranded or oscillated to form a cylindrical core. For special high frequency applications, the cable core shall be separated into compartments. Cable shall be completed by the application of a suitable core wrapping material, a corrugated copper or plastic coated aluminum shield, and an overall extruded jacket. Contractor shall verify distances between splice points prior to ordering cable in specific cut lengths. Gage of conductor shall determine the range of numbers of pairs specified; 22 gage (6 to 1200 pairs). Copper conductor shall conform to the following:
  - 1. Underground: Provide filled cable meeting the requirements of REA 345-67.
  - 2. Screen: Screen-Compartmental core cable shall be filled cable meeting the requirements of REA 345-67.

- B. Grounding and Bonding Conductors: Solid bare copper wire meeting the requirements of ASTM B 1 for sizes No. 8 AWG and smaller and stranded bare copper wire meeting the requirements of ASTM B 8, for sizes No. 6 AWG and larger. Insulated conductors shall have 600-volt, Type TW insulation meeting the requirements of UL 83.

## 2.06 FIBERGLASS ENCLOSURE

- A. Materials: Provide fiberglass enclosure made of the following raw materials:
1. Resins: Thermosetting, medium reactivity, rigid fire resistant polyester containing a maximum monomer content of 42 percent and a maximum of one- percent thixotropic additive.
  2. Glass fiber: Reinforcement shall be K filament type E borosilicate glass having high performance chrome-complex or silane finish compatible with polyester resin.
  3. Gelcoat: Exterior surface coating shall be ultraviolet light stabilized, weather resistant, polyester base containing fade resistant color pigments and such inert extenders as are appropriate to maintain total pigment volume concentration less than 20 percent. Finish color shall be Federal Standard Color No. 14158, per FED-STD-595.
  4. Interior coating: Interior laminate coating when required should be pigmented, heat resistant, high gloss, polyester base, and surfacing sealer.
  5. Other materials: Organize peroxide catalysts and promoters appropriate to the resin type. Use as necessary to provide thorough cure.
- B. Visual Standards: Visual standards of the finished laminate shall conform to acceptance level II of ASTM D 2563.
- C. Content Requirements: Enclosure shall be constructed in accordance with the following:
1. Exterior gelcoat shall be applied to produce a cured film of 0.014 inch plus or minus 0.005 inch in thickness. Distribution of glass reinforcement shall be uniform except in areas of stress concentration where locating reinforcement to thicknesses shown is required.
  2. Mold parts in one piece, including base and doorframes. No sectional parts shall be bolted, cemented, or riveted. Except where matte finish is specified, female molds shall be employed to produce high sheen smooth and uniform exterior surfaces.
  3. Doors shall be of identical material and construction as enclosures. Door locking provisions shall result in snug fit of door to frame, with means provided on each door for either a padlock or pental bolt lock or a combination pental bolt padlock.

4. Ventilators shall be of size, number, and location to allow proper transfer of air through the enclosure. Perforated screens of stainless steel shall be backed with suitable internal baffles to prevent entrance of foreign objects.

## 2.07 MISCELLANEOUS ITEMS

- A. Cable Tags: Stainless steel, 1 5/8-inches in diameter 1/16-inch thick, and circular in shape.
- B. Buried Warning and Identification Tape: Provide colored BURIED WARNING AND IDENTIFICATION TAPE.
- C. Grounding Braid: Grounding braid shall provide low electrical impedance connections for dependable shield bonding. Braid shall be made from flat tin-plated copper.

## PART 3 – EXECUTION

### 3.01 INSTALLATION

Install all system components and appurtenances in accordance with manufacturer's instructions and as shown. Provide all necessary interconnections, services, and adjustments required for a complete and operable telephone system. Installation shall be done in accordance with the safety requirements of ANSI C2, and NFPA 70.

- A. Contractor Damage: Promptly repair indicated utility lines or systems damaged during site preparation and construction. Damages to lines or systems not indicated, which are caused by Contractor operations, shall be treated as "Changes" under the terms of the Contract Clauses. When Contractor is advised in writing of the location of a non-indicated line or system, such notice shall provide that portion of the line or system with "indicated" status in determining liability for damages. In every event, immediately notify the Contracting Officer of damage.
- B. Identification Markers: Provide a marker at each change of direction of the cable, over the ends of ducts or conduits which are installed under paved areas and roadways and over each splice. Identification markers shall be of concrete, approximately 20 inches square by 6 inches thick and stake-mounted warnings meeting the requirements of REA.
- C. Cable Pulling: Test duct lines with a mandrel and swab out to remove foreign material before the pulling of cables. Avoid damage to cables in setting up pulling apparatus or in placing tools or hardware. Do not step on cables when entering or leaving the manhole. Do not place cables in ducts other than those shown without prior written approval of the Engineer. Roll cable reels in the direction indicated by the arrows painted on the reel flanges. Set up cable reels on the same side of the manhole as the conduit section in which the cable is to be placed. Level the reel and bring into proper alignment with the conduit section so that the cable pays off from the top of the reel in a long smooth bend into the duct without twisting. Under no circumstances shall the cable be paid off from the bottom of a reel. Check the equipment set up prior to beginning the cable pulling to avoid an interruption once pulling has started. Use a cable feeder guide of suitable

dimensions between cable reel and face of duct to protect cable and guide cable into the duct as it is paid off the reel. As cable is paid off the reel, lubricate and inspect cable for sheath defects. When defects are noticed, stop pulling operations and notify the Engineer to determine required corrective action. Cable pulling shall also be stopped when reel binds or does not pay off freely. Rectify cause of binding before resuming pulling operations. Provide cable lubricants recommended by the cable manufacturer.

1. Cable Tensions: Obtain from the cable manufacturer and provide to the District Engineer, the maximum allowable pulling tension. This tension shall not be exceeded.
2. Pulling Eyes: Equip cables 1.25 inches in diameter and larger with cable manufacturer's factory installed pulling-in eyes. Provide cables with diameter smaller than 1.25 inches with heat shrinkable type end caps or seals on cable ends when using cable-pulling grips. Rings to prevent grip from slipping shall not be beaten into the cable sheath. Use a swivel of 3/4-inch links between pulling-in eyes or grips and pulling strand.
3. Installation of Cables in Manholes, Handholes, and Vaults: Do not install cables utilizing the shortest route, but route along those walls providing the longest route and the maximum spare cable lengths. Form cables to closely parallel walls, not to interfere with duct entrances, and support cables on brackets and cable insulators at a maximum of 4 feet.

D. Cable Splicing:

1. Copper Conductor Splices: Perform splicing in accordance with requirements of REA 345-6 except that direct buried splices and twisted and soldered splices are not allowed. Exception does not apply for pairs assigned for carrier application.
2. Fiber Optic Splices: Fiber optic splicing shall be in accordance with manufacturer's recommendation and shall exhibit an insertion loss not greater than 0.2 dB for fusion splices and not greater than 0.4 for mechanical splices.

E. Surge Protection: All cables and conductors, except fiber optic cable, which serve as communication lines through off-premise lines, shall have surge protection installed at each end which meet the requirements of REA 345-50.

F. Grounding: Ground exposed non-current carrying metallic parts of telephone equipment, cable sheaths, cable splices, and terminals.

### 3.02 FIELD QUALITY CONTROL

Provide the Engineer with 14 working days notice prior to each test. Provide labor, equipment, and incidentals required for testing. Correct defective material and workmanship disclosed as the results of the tests. Furnish a signed copy of the test results to the Engineer within 3 working days after the tests for each segment of

construction are completed. Perform testing as construction progresses and do not wait until all construction is complete before starting field-tests.

- A. Pre-Installation Tests: Perform the following tests on cable at the job site before it is removed from the cable reel. For cables with factory installed pulling eyes, these tests shall be performed at the factory and certified test results shall accompany the cable.
  - 1. Cable Capacitance: Perform capacitance tests on at least 10 percent of the pairs within a cable to determine if cable capacitance is within the limits specified.
  - 2. Loop Resistance: Perform DC-loop resistance on at least 10 percent of the pairs within a cable to determine if DC-loop resistance is within the manufacturer's calculated resistance.
  - 3. Pre-Installation Test Results: Provide results of pre-installation tests to the District at least 14 working days before installation is to start. Results shall indicate reel number of the cable, manufacturer, size of cable; pairs tested, and recorded readings. When pre-installation tests indicate that cable does not meet specifications, remove cable from the job site.
- B. Acceptance Tests: Copper Conductor Cable: All or part of the following tests may be required by the Engineer: Shield continuity, conductor continuity, conductor insulation resistance, DC-loop resistance, resistance unbalance, insertion loss, frequency response, line noise measurement, subscriber loop measurements, structural return loss (one or two man), cable carrier insertion loss, and cable carrier frequency response.

#### **END OF SECTION**

# **ATTACHMENT A**

## **Agreement**

SANTA CLARA VALLEY WATER DISTRICT

**AGREEMENT**

The following is an agreement entered into as of \_\_\_\_\_  
by and between the SANTA CLARA VALLEY WATER DISTRICT, State of California,  
hereinafter referred to as "District" and \_\_\_\_\_  
\_\_\_\_\_  
hereinafter referred to as "Contractor"

-----  
For the considerations hereinafter specified, Contractor and District agree as follows:

**ARTICLE I: Work to be Done and Documents Forming the Contract**

Contractor agrees to do all the work and furnish all materials necessary to construct and complete, in accordance with the Specifications the following work:

Said work shall be performed to the satisfaction of the Engineer all in accordance with the Drawings, Specifications, Notice to Prospective Bidders, and the Proposal of the Contractor, all of which documents are hereby specially referred to and by such reference made a part of this Contract.

**ARTICLE II: Contract Price**

District hereby agrees and promises to pay to Contractor the sum of \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Dollars (\$) ) for the performance of said work; provided, however, that the above mentioned sum is one determined by the Proposal of Contractor as based upon the estimated amount of work to be done, and should there be any variance between the estimated amount of work to be done and the actual amount of work performed, then the final payment price shall be computed on the basis of the unit prices contained in the Proposal of Contractor.

**ARTICLE III: Completion of Contract**

It is hereby agreed that the work called for under this Contract, in all its parts and requirements, shall be completed before the expiration of \_\_\_\_\_ calendar days from the First Chargeable Day of the Contract as stated on the Notice to Begin Work unless the time for completion is extended, as allowed by the Specifications.

**ARTICLE IV: Bonds Required**

This Contract shall have no force or effect whatsoever unless and until Contractor delivers to District a Payment Bond for Public Works in the sum of \_\_\_\_\_

\_\_\_\_\_ Dollars (\$\_\_\_\_\_).

Nor shall such Contract be effective until Contractor also gives a good and sufficient bond in the sum of \_\_\_\_\_

\_\_\_\_\_ Dollars (\$\_\_\_\_\_)

for the faithful performance of the work to be done under the terms of this Contract.

**ARTICLE V: Certification by Contractor**

Contractor hereby certifies as follows:

"I certify that I am aware of the provisions of Section 3700 of the Labor Code which requires every employer to be insured against liability for workers' compensation or to undertake self insurance in accordance with the provisions of that Code, and I will comply with such provisions before commencing the performance of the work of this Contract."

**ARTICLE VI: Gift Policy Observance**

Contractor hereby acknowledges that District policy prohibits the acceptance by District personnel of gifts of any kind from vendors or contractors. Contractor shall honor this policy by not sending or bringing gifts to the District.

IN WITNESS WHEREOF, Contractor and District have caused this Agreement to be subscribed as of the day and year first hereinabove written.

SANTA CLARA VALLEY WATER DISTRICT

Date District signature affixed: \_\_\_\_\_

By \_\_\_\_\_  
"District"

Date Contractor signature affixed: \_\_\_\_\_

By \_\_\_\_\_

Title \_\_\_\_\_  
"Contractor"

\_\_\_\_\_  
Federal I.D. or S.S. Number



## **ATTACHMENT B**

### **Payment Bond for Public Works**

SANTA CLARA VALLEY WATER DISTRICT  
**PAYMENT BOND FOR PUBLIC WORKS**

BE IT KNOWN BY THESE PRESENTS: That

WHEREAS, the Santa Clara Valley Water District (hereinafter called "the Public Entity"), and

\_\_\_\_\_  
\_\_\_\_\_  
(hereinafter designated as "Principal") have entered into an agreement for the furnishing of  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

which said agreement is dated as of \_\_\_\_\_, 20\_\_\_\_; and

WHEREAS, said Principal is required by Chapter 5 (commencing at Section 3225) and Chapter 7 (commencing at Section 3247), Title 15, Part 4, Division 3 of the California Civil Code to furnish a bond in connection with said agreement;

NOW, THEREFORE, we, the Principal and \_\_\_\_\_

as Surety, are held and firmly bound unto the Public Entity in the penal sum of \_\_\_\_\_

Dollars (\$\_\_\_\_\_), lawful money of the United States of America for the payment of which sum well and truly to be made, we bind ourselves, our heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH that if the Principal or the Principal's subcontractor fails to pay any of the persons named in Section 3181, or amounts due under the California Unemployment Insurance Code with respect to work or labor performed under the agreement, or for any amounts required to be deducted, withheld, and paid over to the Employment Development Department from the wages of employees of the Principal and the Principal's subcontractors pursuant to Section 13020 of the Unemployment Insurance Code, with respect to such work and labor, that the Surety or Sureties will pay for the same, in an amount not exceeding the sum hereinabove specified, and also, in case suit is brought upon the bond, a reasonable attorney's fee, to be fixed by the court. The Principal may require of the Principal's subcontractors a bond to indemnify the Principal for any loss sustained by the Principal because of any default by the Principal's subcontractors under Section 3248 of the California Civil Code.

This bond shall inure to the benefit of any of the persons named in Section 3181 of the California Civil Code, so as to give a right of action to such persons or their assigns in any suit brought upon this bond.

Should the condition of this bond be fully performed, then this obligation shall become null and void; otherwise, it shall be and remain in full force and effect.

IN WITNESS WHEREOF two identical counterparts of this instrument, each of which shall for all purposes be deemed an original thereof, have been duly executed by the Principal and Surety or Sureties above named on the \_\_\_\_\_ day \_\_\_\_\_, of 20\_\_\_\_\_.

\_\_\_\_\_(Seal)

\_\_\_\_\_(Seal)

\_\_\_\_\_(Seal)

\_\_\_\_\_(Seal)

\_\_\_\_\_(Seal)

\_\_\_\_\_(Seal)

Principal

Surety

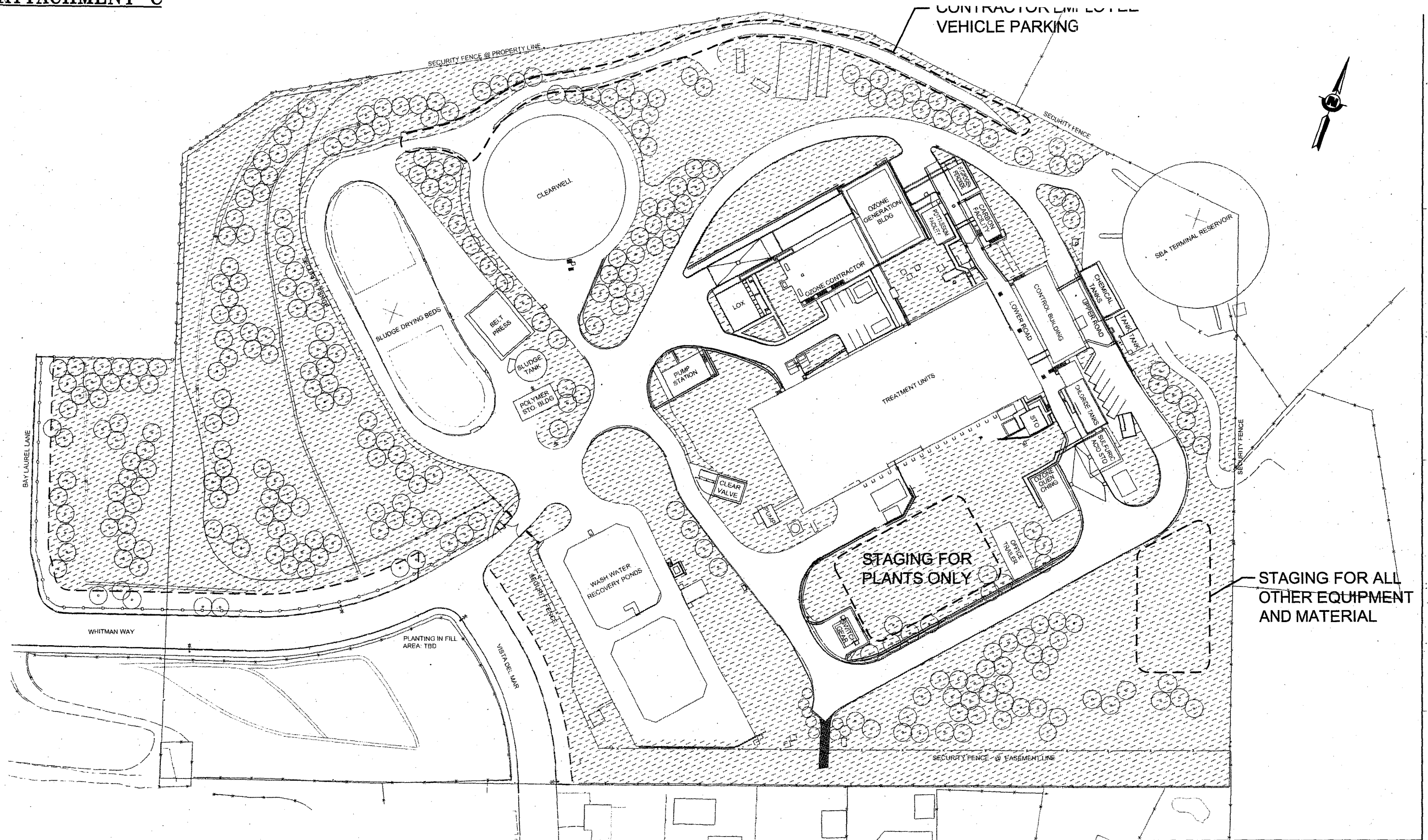
Address

\_\_\_\_\_  
\_\_\_\_\_

NOTE: Signatures of those executing for the Surety or Sureties must be properly acknowledged.

## **ATTACHMENT C**

### **Parking and Staging Plan**



Santa Clara Valley Water District

PROJECT NAME AND SHEET DESCRIPTION:

# PENITENCIA WTP LANDSCAPE SITE IMPROVEMENT PROJECT

PROJECT PARKING AND  
MATERIAL STAGING PLAN

SCALE  
1"=50'

PROJECT NUMBER  
93234037

VERIFY SCALES  
0 1"  
BAR IS ONE INCH ON  
ORIGINAL DRAWING  
IF NOT ONE INCH ON  
THIS SHEET, ADJUST  
SCALES ACCORDINGLY

ATTACHMENT  
C  
1 OF 1

## **ATTACHMENT D**

### **Soil Testing Report**

# LIGHT, AIR & SPACE CONSTRUCTION

ENVIRONMENTAL SERVICES COMPANY

State Contractor's License Number 445403

State EPA R.E.A. Number 04072

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Project No. 0617

June 2, 2006

Santa Clara Valley Water District  
5750 Almaden Expressway  
San Jose, CA 95118-3614

Attn.: Mr. Uday Mandlekar

**RE: Soil Sampling and Chemical Analysis, Landscaping Sample Locations  
Santa Clara Valley Water District Penitencia Plant, San Jose, CA**

Dear Mr. Mandlekar,

Light, Air and Space Construction is pleased to present this letter report to the Santa Clara Valley Water District (District) for the above referenced site. This work was performed for soil sampling for chemical analysis at the District-specified locations of planting areas at various locations at the Penitencia. The District supplied an outline sampling work scope, chemical analytical program and site location maps for this work. This letter report presents the results for the twenty landscaping soil sample locations.

## 1.0 Scope of Work

Three areas of the Penitencia Plant site were sampled for the purpose of installing landscaping and possibly future building. The landscaping areas were sampled using 20 locations as shown on Figure 1 (these locations were detailed on the District-supplied map G-6 using during field sampling). Two other areas, the "north zone" and the "south zone" were sampled for possible future building. The "north zone" was sampled at two locations to a depth of 15 feet while the "south zone" was sampled to a depth of 36-inches at six locations; that data will be reported in a separate letter report.

## 2.0 Field Methods

Twenty shallow soil sample locations were cored with hand cored with light drilling equipment (see Figure 1). The drilling equipment and sampling tools were cleaned prior to arriving and before leaving the site. The samplers were advanced to the desired sampling depth intervals, and soil samples were placed in laboratory supplied pre-cleaned glass bottles. The bottles were

June 2, 2006

Page 1 of 16

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WETLAND AND RIPARIAN HABITAT - ASSESSMENT - DESIGN - RESTORATION - CONSTRUCTION - MITIGATION MONITORING

# LIGHT, AIR & SPACE CONSTRUCTION

ENVIRONMENTAL SERVICES COMPANY

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sealed with screw lids, labeled, logged onto chain-of-custody forms and placed in a chilled ice chest on crushed ice for transport to a state certified laboratory. The shallow borings were backfilled with soil cuttings. Shallow soil samples in each borehole were collected at two shallow depths (6-inches and 18-inches depths have been pre-selected by District personnel). A professional geologist supervised the sampling.

## 3.0 Subsurface Conditions

The surficial soils consisted of sand and clay mixtures with variable amounts of gravel. The deeper borings revealed similar clay strata with possibly highly weathered rock at depths of about 14 feet. Groundwater was not encountered in any boring.

## 4.0 Chemical Analysis

Thirty-nine soil samples were analyzed at Sequoia Analytical laboratories in Morgan Hill, CA. The soil samples were tested for the following; Total Petroleum Hydrocarbons as Gasoline (TPHG) and Diesel (TPHD), Pesticides, Polychlorinated Biphenyls (PCBs) and Asbestos, and CAM 17 Metals using U. S. Environmental Protection Agency Methods 3510, 8010, 8260B, 3081A, polarized light microscopy, and 6000/7000, 6010. The data are summarized in Tables 1 through 5 attached and the analytical reports are attached to this letter report.

## 5.0 Discussion

The laboratory data revealed scattered very low concentrations of pesticides, and TPHD and most soil samples. TPHG was not detected in any sample. The pesticides occurrences are all below the current Regional Water Quality Control Board Environmental Screening Levels (ESLs). The TPHG and TPHD concentrations were just above the detection limits and are possibly attributed to plant matter in samples.

The trace elements ("heavy" metals) all appeared to be within the range of geologic background except for samples and SB-14-6" and SB-10-18". These samples appeared to have elevated levels of chromium and nickel. Several samples showed concentrations of Arsenic that varied from none detected to 44 milligrams per kilogram (mg/kg).

PCB was detected on one sample (SB-8-6") at a concentration of 160 micrograms per kilogram. The source of this PCB is unknown.

June 2, 2006

Page 2 of 16

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Asbestos was not detected in any soil sample. Chrysotile mineral was detected in several however the occurrence was below the detection limit of 0.25% chrysotile according the analyzing laboratory notes.

## Soil Chemical Results Comparisons to RWQCB ESLs and TTLC

| Compound                 | Highest observed Value (mg/kg) | ESL Residential (mg/kg) | ESL Commercial (mg/kg) | Title 22 TTLC (mg/kg) |
|--------------------------|--------------------------------|-------------------------|------------------------|-----------------------|
| TPHD (middle distillate) | 120                            | 100                     | 100                    | No Value              |
| Chlordane (technical)    | 0.056                          | 0.44                    | 1.7                    | 2.5                   |
| 4,4-DDE                  | 0.250                          | 1.6                     | 4.0                    | 1.0                   |
| 4,4-DDT                  | 0.0072                         | 1.6                     | 4.0                    | 1.0                   |
| Dieldrin                 | 0.0025                         | 0.0023                  | 0.0023                 | 8.0                   |
| PCB 1254                 | 0.160                          | 0.22 (as PCBs)          | 0.74 (as PCBs)         | No value              |
| Arsenic                  | 44                             | 5.5                     | 5.5                    | 500                   |
| Chromium as (III)        | 490                            | 750                     | 750                    | 2500                  |
| Nickel                   | 870                            | 150                     | 150                    | 2000                  |

TTLC - Total Threshold Limit Concentration. No value - No value listed for that compound. ESL data assumes shallow soils for residential and commercial are less than or equal to 3 meters (about 10 feet) in depth. "Residential" land use implies some sensitive land use as housing, day care, etc. Compound results listed in mg/kg for ease in comparison. See laboratory reports.

The ESL level comparisons indicate that the soil is slightly exceeded for an assumed residential land use for Dieldrin. Localized occurrences of Chromium and Nickel are somewhat elevated in comparison to ESL guidance, but are below TTLC. Arsenic exceeds the residential and commercial, however these metals presence is attributed to the surrounding geologic source rocks and represent the background for the Plant area in our opinion.

TPHD compounds that do not match the laboratory fuel standard and pesticides that represent degraded compounds. The PCB is below the ESL guidance. Sources of these contaminants are unknown.

## 6.0 Conclusions and Recommendations

LA&S performed soil sampling at District specified locations to collect data in areas of proposed landscaping and planting. The data show that TPHG, TPHD, pesticides are sporadically present at very low concentrations. These concentrations are below the RWQCB ESLs and are not interpreted to be an exposure threat to workers. The concentrations of "heavy metals" are interpreted as occurring within the background of the regional geology. The occurrence of Chromium and Nickel appears is interpreted as related to presence of ultramafic rock, and Arsenic due to marine sedimentary rocks.

June 2, 2006

Page 3 of 16

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# LIGHT, AIR & SPACE CONSTRUCTION

ENVIRONMENTAL SERVICES COMPANY

State Contractor's License Number 445403

State EPA R.E.A. Number 04072

One occurrence of PCB at 160 micrograms per kilogram was present at SB-8-6" is below the ESL in shallow soil, and the source of PCB is unknown. Asbestos was not reported in the samples although numerous samples did contain chrysotile, an asbestos related mineral. However the chrysotile was below the detection limit and not interpreted as an exposure hazard.

LA&S recommends that while asbestos is not detected, and there are some local occurrences of Chromium, Nickel and Arsenic, workers should use gloves and dust masks if excessive dust is raised during work, and that they wash clothes at the end of the workday. The soil appears to slightly exceed ESLs for Dieldrin, Nickel and Arsenic. LA&S does not recommend that this soil be reused for residential or sensitive sites.

## 7.0 Limitations

This report has been prepared specifically for the District Site at the Penitencia Plant in San Jose and was done according to the current State and local agency suggested guidance documents for these investigations. The interpretations, conclusions and recommendations made herein are based on the data and analysis for the soil and water samples collected on-site, or other on-site reports and should be reviewed in the context of this report and other site reports. Conditions of the property can change over time and the use of this report by third parties is entirely at their own risk. Please note that reports of contamination must be submitted to the agencies in a timely manner. Light, Air and Space Construction is not responsible for errors neither in laboratory analysis and reporting nor for information not available, nor unreported or unknown sources of site contamination during the course of the study, and no warranty or guarantee is expressed or implied therein. If you have any questions, please call.

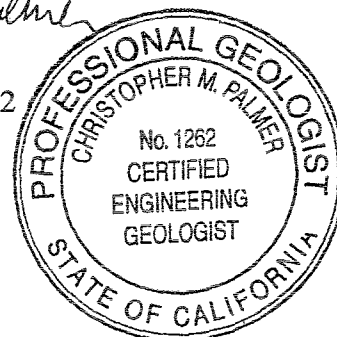
Sincerely,

**Light, Air and Space Construction**

David B. Guthridge, Principal  
R.E.A. 04072

*Christopher M. Palmer*

Christopher M. Palmer  
REAII 20185; CEG 1262



## Attachments

Figure 1. Soil Sample Location Sketch Map  
Chemical Analytical Reports and Chain-of-Custody

June 2, 2006

Page 4 of 46

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GENERAL AND ENGINEERING CONTRACTOR • HAZARDOUS SUBSTANCE REMOVAL CONTRACTOR • SITE ENVIRONMENTAL ASSESSMENTS

WETLAND AND RIPARIAN HABITAT - ASSESSMENT - DESIGN - RESTORATION - CONSTRUCTION - MITIGATION MONITORING

# LIGHT, AIR & SPACE CONSTRUCTION

ENVIRONMENTAL SERVICES COMPANY

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**Table 5. Asbestos in Soil**

| Sample Number | Asbestos % |
|---------------|------------|
| SB-1-6"       | ND         |
| SB-1-18"      | ND         |
| SB-2-6"       | ND         |
| SB-2-18"      | <0.25 CH   |
| SB-3-6"       | <0.25 CH   |
| SB-3-18"      | ND         |
| SB-4-6"       | ND         |
| SB-5-6"       | ND         |
| SB-6-6"       | ND         |
| SB-6-18"      | ND         |
| SB-7-6"       | <0.25 CH   |
| SB-8-6"       | ND         |
| SB-8-6"       | <0.25 CH   |
| SB-9-6"       | ND         |
| SB-9-18"      | <0.25 CH   |
| SB-10-6"      | ND         |
| SB-10-18"     | ND         |
| SB-11-6"      | <0.25 CH   |
| SB-11-18"     | <0.25 CH   |
| SB-12-6"      | ND         |
| SB-12-18"     | ND         |
| SB-13-6"      | <0.25 CH   |
| SB-14-6"      | ND         |
| SB-15-6"      | ND         |
| SB-15-18"     | ND         |
| SB-16-6"      | ND         |
| SB-16-18"     | ND         |
| SB-17-6"      | <0.25 CH   |
| SB-17-18"     | ND         |
| SB-18-6"      | ND         |
| SB-19-6"      | <0.25 CH   |
| SB-20-6"      | ND         |
| SB-20-18"     | <0.25 CH   |

<0.25 CH – Indicates asbestos was identified in the sample but at a concentration of less than the detection limit of 0.255. TTLC for Asbestos is 500 mg/kg.

June 2, 2006

Page 15 of 16

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# LIGHT, AIR & SPACE CONSTRUCTION

ENVIRONMENTAL SERVICES COMPANY

State Contractor's License Number 445403

State EPA R.E.A. Number 04072

## Sample Locations by Hand-held Global Positioning

| Sample Number | Latitude decimal degrees | Longitude decimal degrees |
|---------------|--------------------------|---------------------------|
| SB-1          | 37 23.888                | 121 50.150                |
| SB-2          | 37 23.864                | 121 50.178                |
| SB-3          | 37 23.908                | 121 50.201                |
| SB-4          | 37 23.911                | 121 50.192                |
| SB-5          | 37 23.899                | 121 50.164                |
| SB-6          | 37 23.910                | 121 50.165                |
| SB-7          | 37 23.910                | 121 50.190                |
| SB-8          | 37 23.946                | 121 50.164                |
| SB-9          | 37 23.969                | 121 50.152                |
| SB-10         | 37 23.957                | 121 50.107                |
| SB-11         | 37 23.977                | 121 50.078                |
| SB-12         | 37 23.990                | 121 50.060                |
| SB-13         | 37 23.975                | 121 50.032                |
| SB-14         | 37 23.984                | 121 50.023                |
| SB-15         | 37 23.962                | 121 49.992                |
| SB-16         | 37 23.929                | 121 49.979                |
| SB-17         | 37 23.910                | 121 49.999                |
| SB-18         | 37 23.912                | 121 50.010                |
| SB-19         | 37 23.901                | 121 50.076                |
| SB-20         | 37 23.921                | 121 50.082                |

June 2, 2006

Page 16 of 16

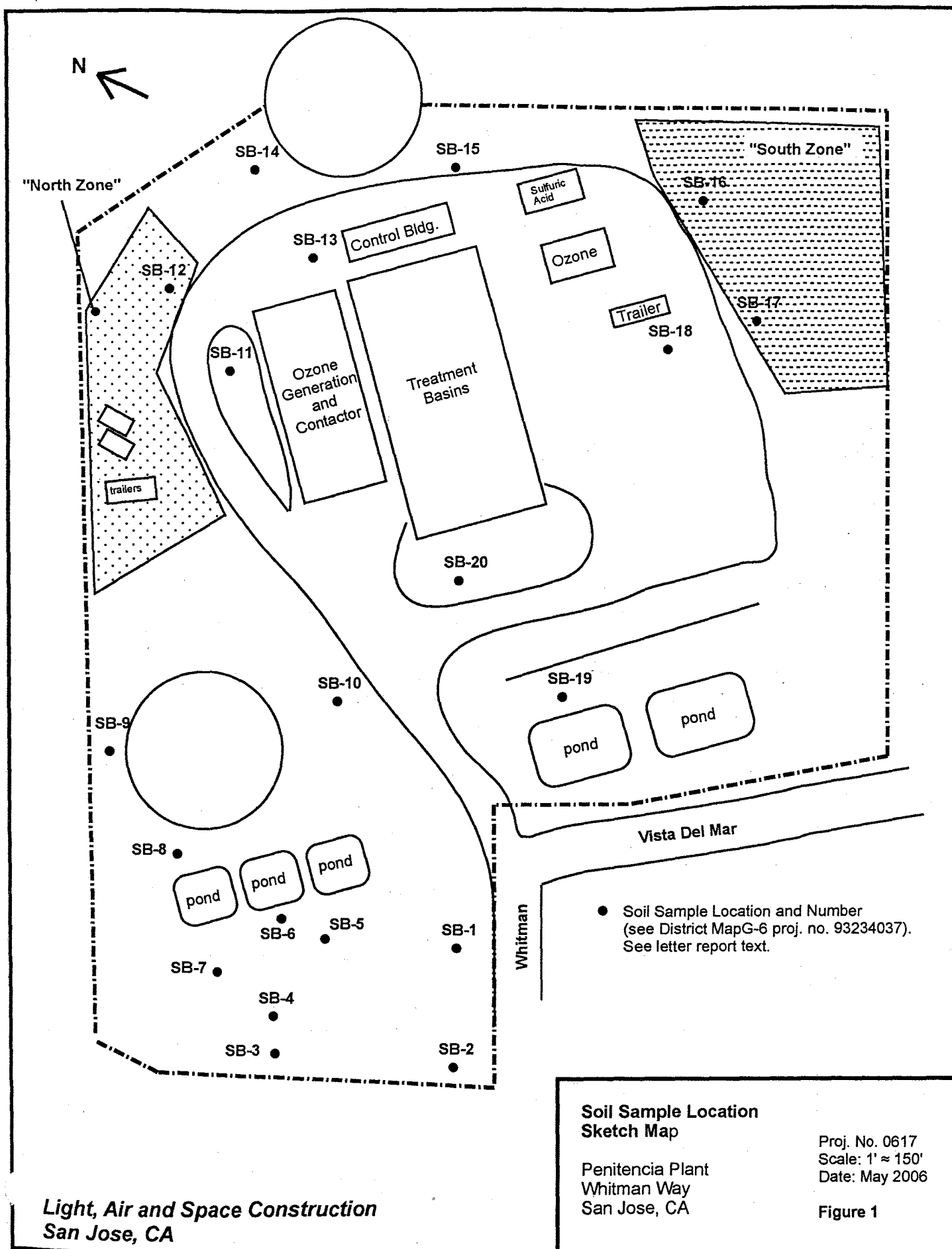
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## **APPENDIX A**

**City Permit / NPDES General Permit / BMPs**

**DEVELOPMENT PERMIT ADJUSTMENT**

PROJECT FILE NO.: AD06-032  
PERMIT TO BE ADJUSTED: H03-013  
PROJECT DESCRIPTION: Permit adjustment for additional landscaping, new front gate, guard house and screening walls on Water District Property.  
PROJECT LOCATION: 3959 WHITMAN WY  
A.P.N.(s): 595-04-072  
ZONING: R-1-8 Single-Family Residence  
GENERAL PLAN: Public/Quasi-Public

---

ACTION: Approved

SUBJECT TO THE FOLLOWING CONDITIONS:

Scope of work is as follows:

1. A new decorative front entrance along Whitman Way (including gate, walls, guard house, short walkway and decorative fence)
2. Placement of "green screens," which are architectural walls with vines and tall hedges at selected sites to create a green veil which will soften and transform infrastructure and building façades
3. Fascia for the treatment basin to create a more consistent design theme for the treatment plant that is less industrial
4. Landscaping such as grasses, groundcovers, shrubs and trees with an irrigation system to improve the aesthetics of the site and help screen Plant facilities.

Plan Set: ☒ Yes ☐ No

Approved by: Sanhita Mallick

Signature: 

Action Date: March 02, 2006

This permit sheet is only valid when accompanied by an original signature and when fastened to a stamped plan set.



Winston H. Hickox  
Secretary for  
Environmental  
Protection

# State Water Resources Control Board

## Division of Water Quality

1001 I Street • Sacramento, California 95814 • (916) 341-5537  
Mailing Address: P.O. Box 1977 • Sacramento, California • 95812-1977  
FAX (916) 341-5543 • Internet Address: <http://www.swrcb.ca.gov>



Gray Davis  
Governor

To: CONSTRUCTION STORM WATER DISCHARGER

SUBJECT: CHECKLIST FOR SUBMITTING A NOTICE OF INTENT

In order for the State Water Resources Control Board to expeditiously process your Notice of Intent (NOI), the following items must be submitted to either of the addresses indicated below:

1. \_\_\_\_\_ NOI (please keep a copy for your files) with all applicable sections completed and original signature of the landowner or signatory agent;
2. \_\_\_\_\_ Check made out to the "State Water Resources Control Board" for \$700.00; and
3. \_\_\_\_\_ Site Map of the facility (see NOI instructions). DO NOT SEND BLUEPRINTS

### U.S. Postal Service Address

State Water Resources Control Board  
Division of Water Quality  
Attn: Storm Water Section  
P.O. Box 1977  
Sacramento, CA 95812-1977

### Overnight Mailing Address

State Water Resources Control Board  
Division Of Water Quality  
Attn: Storm Water, 15<sup>th</sup> Floor  
1001 I Street  
Sacramento, CA 95814

NOIs are processed in the order they are received. A NOI receipt letter will be mailed to the land owner within approximately two weeks. Incomplete NOI submittals will be returned to the landowner's address within the same timeframe and will specify the reason(s) for return. If you need a receipt letter by a specific date (for example, to provide to a local agency), we advise that you submit your NOI thirty (30) days prior to the date the receipt letter is needed.

Please do not call us to verify your NOI status. A copy of your NOI receipt letter will be available on our web page within twenty-four (24) hours of processing. Go to:

<http://esmr.swrcb.ca.gov:7778/dwq/ConReceiptLetter.asp> to retrieve an electronic copy of your NOI receipt letter. If you have any questions regarding this matter, please contact us at (916) 341-5537.



FACT SHEET  
FOR  
WATER QUALITY ORDER 99-08-DWQ

STATE WATER RESOURCES CONTROL BOARD (SWRCB)  
901 P STREET, SACRAMENTO, CALIFORNIA 95814

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)  
GENERAL PERMIT FOR  
STORM WATER DISCHARGES ASSOCIATED WITH  
CONSTRUCTION ACTIVITY (GENERAL PERMIT)

BACKGROUND

In 1972, the Federal Water Pollution Control Act (also referred to as the Clean Water Act [CWA]) was amended to provide that the discharge of pollutants to waters of the United States from any point source is unlawful unless the discharge is in compliance with an NPDES permit. The 1987 amendments to the CWA added Section 402(p) which establishes a framework for regulating municipal and industrial storm water discharges under the NPDES Program. On November 16, 1990, the U.S. Environmental Protection Agency (USEPA) published final regulations that establish storm water permit application requirements for specified categories of industries. The regulations provide that discharges of storm water to waters of the United States from construction projects that encompass five (5) or more acres of soil disturbance are effectively prohibited unless the discharge is in compliance with an NPDES Permit. Regulations (Phase II Rule) that became final on December 8, 1999 expand the existing NPDES program to address storm water discharges from construction sites that disturb land equal to or greater than one (1) acre and less than five (5) acres (small construction activity). The regulations require that small construction activity, other than those regulated under an individual or Regional Water Quality Control Board General Permit, must be permitted no later than March 10, 2003.

While federal regulations allow two permitting options for storm water discharges (individual permits and General Permits), the SWRCB has elected to adopt only one statewide General Permit at this time that will apply to all storm water discharges associated with construction activity, except from those on Tribal Lands, in the Lake Tahoe Hydrologic Unit, and those performed by the California Department of Transportation (Caltrans). Construction on Tribal Lands is regulated by an USEPA permit, the Lahontan Regional Water Control Board adopted a separate NPDES permit for the Lake Tahoe Hydrologic Unit, and the SWRCB adopted a separate NPDES permit for Caltrans projects. This General Permit requires all dischargers where construction activity disturbs one acre or more, to:

1. Develop and implement a Storm Water Pollution Prevention Plan (SWPPP) which specifies Best Management Practices (BMPs) that will prevent all construction pollutants from contacting

storm water and with the intent of keeping all products of erosion from moving off site into receiving waters.

2. Eliminate or reduce nonstorm water discharges to storm sewer systems and other waters of the nation.
3. Perform inspections of all BMPs.

This General Permit shall be implemented and enforced by the nine California Regional Water Quality Control Boards (RWQCBs).

The General Permit accompanying this fact sheet regulates storm water runoff from construction sites. Regulating many storm water discharges under one permit will greatly reduce the otherwise overwhelming administrative burden associated with permitting individual storm water discharges. Dischargers shall submit a Notice of Intent (NOI) to obtain coverage under this General Permit. It is expected that as the storm water program develops, the RWQCBs may issue General Permits or individual permits containing more specific permit provisions. When this occurs, those dischargers will no longer be regulated by this General Permit.

On August 19, 1999, the State Water Resources Control Board (SWRCB) reissued the General Construction Storm Water Permit (Water Quality Order 99-08-DWQ referred to as "General Permit"). The San Francisco BayKeeper, Santa Monica BayKeeper, San Diego BayKeeper, and Orange Coast Keeper filed a petition for writ of mandate challenging the General Permit in the Superior Court, County of Sacramento. The Court issued a judgment and writ of mandate on September 15, 2000. The Court directed the SWRCB to modify the provisions of the General Permit to require permittees to implement specific sampling and analytical procedures to determine whether Best Management Practices (BMPs) implemented on a construction site are: (1) preventing further impairment by sediment in storm waters discharged directly into waters listed as impaired for sediment or silt, and (2) preventing other pollutants, that are known or should be known by permittees to occur on construction sites and that are not visually detectable in storm water discharges, from causing or contributing to exceedances of water quality objectives. The monitoring provisions in the General Permit have been modified pursuant to the court order.

#### TYPES OF CONSTRUCTION ACTIVITY COVERED BY THIS GENERAL PERMIT

Construction activity subject to this General Permit includes clearing, grading, disturbances to the ground such as stockpiling, or excavation that results in soil disturbances of at least one acre of total land area. Construction activity that results in soil disturbances of less than one acre is subject to this General Permit if the construction activity is part of a larger common plan of development that encompasses one or more acres of soil disturbance or if there is significant water quality impairment resulting from the activity. Construction activity does not include routine maintenance to maintain original line and grade, hydraulic capacity, or original purpose of the facility, nor does it include

emergency construction activities required to protect public health and safety. Dischargers should confirm with the local RWQCB whether or not a particular routine maintenance activity is subject to this General Permit.

A construction project which includes a dredge and/or fill discharge to any jurisdictional surface water (e.g., wetland, channel, pond, or marine water) will also need a CWA Section 404 permit from the U.S. Army Corps of Engineers and a CWA Section 401 Water Quality Certification from the RWQCB/SWRCB. Storm water discharges from dredge spoil placement which occurs outside of Corps jurisdiction (upland sites) and are part of construction activity which disturbs one or more acres of land are covered by this general permit. Proponents of construction projects which disturb one or more acres of land within the jurisdictional boundaries of a CWA Section 404 permit should contact the local RWQCB to determine the applicability of this permit to the project.

#### NOTIFICATION REQUIREMENTS

It is the responsibility of the landowner to obtain coverage under this General Permit prior to commencement of construction activities. To obtain coverage, the landowner must file an NOI with a vicinity map and the appropriate fee with the SWRCB. In addition, coverage under this permit shall not occur until the applicant develops an adequate SWPPP for the project. Section A of the General Permit outlines the required contents of a SWPPP. For proposed construction activity on easements or on nearby property by agreement or permission, the entity responsible for the construction activity shall file an NOI and filing fee and shall be responsible for development of the SWPPP, all of which must occur prior to commencement of construction activities.

A separate NOI shall be submitted to the SWRCB for each construction site. Owners of new construction shall file an NOI prior to the commencement of construction. Owners of an ongoing construction site that is covered under the previous General Construction Permit (WQ Order No.92-08-DWQ) (1) shall continue to implement their existing SWPPP and monitoring program and (2) shall implement any necessary revisions to their SWPPP in a timely manner but in no case later than 90-calender days from adoption of this General Permit in accordance with Section A of this General Permit.

The NOI requirements of the General Permit are intended to establish a mechanism which can be used to clearly identify the responsible parties, locations, and scope of operations of dischargers covered by the General Permit and to document the discharger's knowledge of the requirements for a SWPPP.

The NOI must be sent to the following address:

State Water Resources Control Board  
Division of Water Quality  
Storm Water Permit Unit  
P.O. Box 1977  
Sacramento, CA 95812-1977

The current annual fee for this General Permit is \$700.

When construction is complete or ownership has been transferred, dischargers shall file a Notice of Termination with the RWQCB certifying that all State and local requirements have been met in accordance with Special Provisions for Construction Activity, C.7, of the General Permit.

Dischargers who fail to obtain coverage under this General Permit for storm water discharges to surface waters will be in violation of the CWA and the California Water Code.

#### CONSTRUCTION ACTIVITY NOT COVERED BY THIS GENERAL PERMIT

This General Permit does not apply to storm water discharges from (1) those areas on Tribal Lands; (2) the Lake Tahoe Hydrologic Unit; (3) construction under one acre, unless part of a larger common plan of development or sale; (4) projects covered by an individual NPDES Permit for storm water discharges associated with construction activity; and (5) landfill construction that is subject to the general industrial permit.

Storm water discharges in the Lake Tahoe Hydrologic Unit are regulated by a separate permit(s) adopted by the California Regional Water Quality Control Board, Lahontan Region (LRWQCB). USEPA regulates storm water discharges on Tribal Lands. Permit applications for storm water discharges that will be conducted in the Lake Tahoe Hydrologic Unit must be submitted directly to the LRWQCB.

#### DESCRIPTION OF GENERAL PERMIT CONDITIONS

The following is a brief description of the major provisions of the General Permit and the basis for the General Permit.

##### Prohibitions

This General Permit authorizes the discharge of storm water to surface waters from construction activities that result in the disturbance of one or more acres of land. It prohibits the discharge of materials other than storm water and authorized non-storm water discharges and all discharges which contain a hazardous substance in excess of reportable quantities established at 40 Code of Federal Regulations (CFR) 117.3 or 40 CFR 302.4 unless a separate NPDES Permit has been issued to regulate those discharges. In addition, this General Permit contains provisions that uphold discharge prohibitions contained in water quality control plans, as implemented through the nine RWQCBs.

##### Effluent Limitations

Permits for storm water discharges associated with construction activity shall meet all applicable provisions of Sections 301 and 402 of the CWA. These provisions require controls of pollutant

discharges that utilize best available technology economically achievable (BAT) and best conventional pollutant control technology (BCT) to reduce pollutants and any more stringent controls necessary to meet water quality standards.

It is not feasible at this time for the SWRCB to establish numeric effluent limitations. The reasons why it is not feasible to establish numeric effluent limitations are discussed in detail in SWRCB Order Nos. WQ 91-03 and WQ 91-04. Therefore, the effluent limitations contained in this General Permit are narrative and include the requirement to implement appropriate BMPs. The BMPs shall primarily emphasize source controls such as erosion control and pollution prevention methods. The discharger shall also install structural controls, as necessary, such as sediment control which will constitute BAT and BCT and will achieve compliance with water quality standards. The narrative effluent limitations constitute compliance with the requirements of the CWA.

Elimination or reduction of nonstorm water discharges is a major goal of this General Permit. Nonstorm water discharges include a wide variety of sources, including improper dumping, spills, or leakage from storage tanks or transfer areas. Nonstorm water discharges may contribute a significant pollutant load to receiving waters. Measures to control spills, leakage, and dumping and to prevent illicit connections during construction shall be addressed through structural as well as non-structural BMPs.

This General Permit prohibits the discharge of materials other than storm water and authorized nonstorm water discharges. It is recognized that certain nonstorm water discharges may be necessary for the completion of construction projects. Such discharges include, but are not limited to irrigation of vegetative erosion control measures, pipe flushing and testing, street cleaning, and dewatering. Such discharges are allowed by this General Permit provided they are not relied upon to clean up failed or inadequate construction or post-construction BMPs designed to keep materials onsite. These authorized nonstorm water discharges shall (1) be infeasible to eliminate, (2) comply with BMPs as described in the SWPPP, and (3) not cause or contribute to a violation of water quality standards. Additionally, these discharges may be required to be permitted by the local RWQCB (e.g., some RWQCBs have adopted General Permits for dewatering discharges). This General Permit is performance-based to the extent that it prohibits the discharge of storm water that causes or threatens to cause pollution, contamination, or nuisance; but it also allows the owner/developer to determine the most economical, effective, and possibly innovative BMPs.

The requirements of this General Permit are intended to be implemented on a year-round basis, not just during the part of the year when there is a high probability of a precipitation event which results in storm water runoff. The permit should be implemented at the appropriate level and in a proactive manner during all seasons while construction is ongoing.

Weather and storm predictions or weather information concerning the 10-year, 6-hour storm event and mean annual rainfall can be obtained by calling the Western Regional Climate Center at 775-674-7010 or via the internet at [www.wrcc.dri.edu/precip.html](http://www.wrcc.dri.edu/precip.html) and/or [www.wrcc.dri.edu/pcpnfreq.html](http://www.wrcc.dri.edu/pcpnfreq.html).

### Receiving Water Limitations Language

The receiving water limitations language is fundamentally different from the language adopted in the SWRCB General Industrial Activities Storm Water Permit on April 17, 1997. Construction related activities which cause or contribute to an exceedance of water quality standards must be corrected immediately and cannot wait for the RWQCB to approve a plan of action to correct. The dynamic nature of construction activity allows the discharger the ability to more quickly identify and correct the source of the exceedances. Therefore, the owner is required to take immediate corrective action and to provide a report to the appropriate RWQCB within 14-calendar days of the violation describing the corrective action.

### Storm Water Pollution Prevention Plan (SWPPP)

This General Permit requires development and implementation of a SWPPP. This document emphasizes the use of appropriately selected, correctly installed and maintained pollution reduction BMPs. This approach provides the flexibility necessary to establish BMPs which can effectively address source control of pollutants during changing construction activities.

All dischargers shall prepare and implement a SWPPP prior to disturbing a site. The SWPPP must be implemented at the appropriate level to protect water quality at all times throughout the life of the project. Nonstorm water BMPs must be implemented year round. The SWPPP shall remain on the site while the site is under construction, commencing with the initial mobilization and ending with the termination of coverage under the permit.

The SWPPP has two major objectives: (1) to help identify the sources of sediment and other pollutants that affect the quality of storm water discharges and (2) to describe and ensure the implementation of BMPs to reduce or eliminate sediment and other pollutants in storm water as well as nonstorm water discharges. The SWPPP shall include BMPs which address source control and, if necessary, shall also include BMPs which address pollutant control.

Required elements of a SWPPP include: (1) site description addressing the elements and characteristics specific to the site, (2) descriptions of BMPs for erosion and sediment controls, (3) BMPs for construction waste handling and disposal, (4) implementation of approved local plans, (5) proposed post-construction controls, including description of local post-construction erosion and sediment control requirements, and (6) nonstorm water management.

To ensure that the preparation, implementation, and oversight of the SWPPP is sufficient for effective pollution prevention, individuals responsible for creating, revising, overseeing, and implementing the SWPPP should participate in applicable training programs and document such training in the SWPPP.

SWPPPs are reports that are available to the public under Section 308(b) of the CWA and will be made available by the RWQCB upon request.

### Monitoring Program

Another major feature of the General Permit is the development and implementation of a monitoring program. All dischargers are required to conduct inspections of the construction site prior to anticipated storm events and after actual storm events. During extended storm events, inspections must be made during each 24-hour period. The goals of these inspections are (1) to identify areas contributing to a storm water discharge; (2) to evaluate whether measures to reduce pollutant loadings identified in the SWPPP are adequate and properly installed and functioning in accordance with the terms of the General Permit; and (3) whether additional control practices or corrective maintenance activities are needed. Equipment, materials, and workers must be available for rapid response to failures and emergencies. All corrective maintenance to BMPs shall be performed as soon as possible, depending upon worker safety.

Each discharger shall certify annually that the construction activities are in compliance with the requirements of this General Permit. Dischargers who cannot certify annual compliance shall notify the appropriate RWQCB. A well-developed monitoring program will provide a good method for checking the effectiveness of the SWPPP.

### Retention of Records

The discharger is required to retain records of all monitoring information, copies of all reports required by this General Permit, and records of all data used to complete the NOI for all construction activities to be covered by the General Permit for a period of at least three years from the date generated. This period may be extended by request of the SWRCB and/or RWQCB. With the exception of reporting noncompliance to the appropriate RWQCB, dischargers are not required to submit the records, except upon specific request by the RWQCB.

**STATE WATER RESOURCES CONTROL BOARD (SWRCB )  
ORDER NO. 99 - 08 - DWQ  
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)  
GENERAL PERMIT NO. CAS000002**

**WASTE DISCHARGE REQUIREMENTS (WDRS)  
FOR  
DISCHARGES OF STORM WATER RUNOFF ASSOCIATED WITH CONSTRUCTION  
ACTIVITY**

The State Water Resources Control Board finds that:

1. Federal regulations for controlling pollutants in storm water runoff discharges were promulgated by the U.S. Environmental Protection Agency (USEPA) on November 16, 1990 (40 Code of Federal Regulations (CFR) Parts 122, 123, and 124). The regulations require discharges of storm water to surface waters associated with construction activity including clearing, grading, and excavation activities (except operations that result in disturbance of less than five acres of total land area and which are not part of a larger common plan of development or sale) to obtain an NPDES permit and to implement Best Available Technology Economically Achievable (BAT) and Best Conventional Pollutant Control Technology (BCT) to reduce or eliminate storm water pollution.

On December 8, 1999 federal regulations promulgated by USEPA (40CFR Parts 9, 122, 123, and 124) expanded the NPDES storm water program to include storm water discharges from municipal separate storm sewer systems (MS4s) and construction sites that were smaller than those previously included in the program. Federal regulation 40 CFR § 122.26(b)(15) defines small construction activity as including clearing, grading, and excavating that result in land disturbance of equal to or greater than one acre or less than five acres or is part of a larger common plan of development or sale. Permit applications for small construction activities are due by March 10, 2003.

2. This General Permit regulates pollutants in discharges of storm water associated with construction activity (storm water discharges) to surface waters, except from those areas on Tribal Lands; Lake Tahoe Hydrologic Unit; construction projects which disturb less than one acre, unless part of a larger common plan of development or sale; and storm water discharges which are determined ineligible for coverage under this General Permit by the California Regional Water Quality Control Boards (RWQCBs). Attachment 1 contains addresses and telephone numbers of each RWQCB office.
3. This General Permit does not preempt or supersede the authority of local storm water management agencies to prohibit, restrict, or control storm water discharges to separate storm



sewer systems or other watercourses within their jurisdiction, as allowed by State and Federal law.

4. To obtain authorization for proposed storm water discharges to surface waters, pursuant to this General Permit, the landowner (discharger) must submit a Notice of Intent (NOI) with a vicinity map and the appropriate fee to the SWRCB prior to commencement of construction activities. In addition, coverage under this General Permit shall not occur until the applicant develops a Storm Water Pollution Prevention Plan (SWPPP) in accordance with the requirements of Section A of this permit for the project. For proposed construction activity conducted on easements or on nearby property by agreement or permission, or by an owner or lessee of a mineral estate (oil, gas, geothermal, aggregate, precious metals, and/or industrial minerals) entitled to conduct the activities, the entity responsible for the construction activity must submit the NOI and filing fee and shall be responsible for development of the SWPPP.
5. If an individual NPDES Permit is issued to a discharger otherwise subject to this General Permit or if an alternative General Permit is subsequently adopted which covers storm water discharges regulated by this General Permit, the applicability of this General Permit to such discharges is automatically terminated on the effective date of the individual permit or the date of approval for coverage under the subsequent General Permit.
6. This action to adopt an NPDES permit is exempt from the provisions of the California Environmental Quality Act (Public Resources Code Section 21100, et seq.) in accordance with section 13389 of the California Water Code.
7. The SWRCB adopted the California Ocean Plan, and the RWQCBs have adopted and the SWRCB has approved Water Quality Control Plans (Basin Plans). Dischargers regulated by this General Permit must comply with the water quality standards in these Basin Plans and subsequent amendments thereto.
8. The SWRCB finds storm water discharges associated with construction activity to be a potential significant sources of pollutants. Furthermore, the SWRCB finds that storm water discharges associated with construction activities have the reasonable potential to cause or contribute to an excursion above water quality standards for sediment in the water bodies listed in Attachment 3 to this permit.
9. It is not feasible at this time to establish numeric effluent limitations for pollutants in storm water discharges from construction activities. Instead, the provisions of this General Permit require implementation of Best Management Practices (BMPs) to control and abate the discharge of pollutants in storm water discharges.
10. Discharges of non-storm water may be necessary for the completion of certain construction projects. Such discharges include, but are not limited to: irrigation of vegetative erosion control measures, pipe flushing and testing, street cleaning, and dewatering. Such discharges are

authorized by this General Permit as long as they (a) do comply with Section A.9 of this General Permit, (b) do not cause or contribute to violation of any water quality standard, (c) do not violate any other provision of this General Permit, (d) do not require a non-storm water permit as issued by some RWQCBs, and (e) are not prohibited by a Basin Plan. If a non-storm water discharge is subject to a separate permit adopted by a RWQCB, the discharge must additionally be authorized by the RWQCB permit.

11. Following adoption of this General Permit, the RWQCBs shall enforce the provisions herein including the monitoring and reporting requirements.
12. Following public notice in accordance with State and Federal laws and regulations, the SWRCB in a public meeting on June 8, 1998, heard and considered all comments. The SWRCB has prepared written responses to all significant comments.
13. This Order is an NPDES permit in compliance with section 402 of the Clean Water Act (CWA) and shall take effect upon adoption by the SWRCB provided the Regional Administrator of the USEPA has no objection. If the USEPA Regional Administrator objects to its issuance, the General Permit shall not become effective until such objection is withdrawn.
14. This General Permit does not authorize discharges of fill or dredged material regulated by the U.S. Army Corps of Engineers under CWA section 404 and does not constitute a waiver of water quality certification under CWA section 401.
15. The Monitoring Program and Reporting Requirements are modified in compliance with a judgment in the case of San Francisco BayKeeper, et al. v. State Water Resources Control Board. The modifications include sampling and analysis requirements for direct discharges of sediment to waters impaired due to sediment and for pollutants that are not visually detectable in runoff that may cause or contribute to an exceedance of water quality objectives.
16. Storm water discharges associated with industrial activity that are owned or operated by municipalities serving populations less than 100,000 people are no longer exempt from the need to apply for or obtain a storm water discharge permit. A temporary exemption, which was later extended by USEPA, was provided under section 1068(c) of the Intermodal Surface Transportation and Efficiency Act (ISTEA) of 1991. Federal regulation 40 CFR § 122.26(e)(1)(ii) requires the above municipalities to submit permit application by March 10, 2003.
17. This permit may be reopened and modified to include different monitoring requirements for small construction activity than for construction activity over five (5) acres.

IT IS HEREBY ORDERED that all dischargers who file an NOI indicating their intention to be regulated under the provisions of this General Permit shall comply with the following:

A. DISCHARGE PROHIBITIONS:

1. Authorization pursuant to this General Permit does not constitute an exemption to applicable discharge prohibitions prescribed in Basin Plans, as implemented by the nine RWQCBs.
2. Discharges of material other than storm water which are not otherwise authorized by an NPDES permit to a separate storm sewer system (MS4) or waters of the nation are prohibited, except as allowed in Special Provisions for Construction Activity, C.3.
3. Storm water discharges shall not cause or threaten to cause pollution, contamination, or nuisance.
4. Storm water discharges regulated by this General Permit shall not contain a hazardous substance equal to or in excess of a reportable quantity listed in 40 CFR Part 117 and/or 40 CFR Part 302.

B. RECEIVING WATER LIMITATIONS:

1. Storm water discharges and authorized nonstorm water discharges to any surface or ground water shall not adversely impact human health or the environment.
2. The SWPPP developed for the construction activity covered by this General Permit shall be designed and implemented such that storm water discharges and authorized nonstorm water discharges shall not cause or contribute to an exceedance of any applicable water quality standards contained in a Statewide Water Quality Control Plan and/or the applicable RWQCB's Basin Plan.
3. Should it be determined by the discharger, SWRCB, or RWQCB that storm water discharges and/or authorized nonstorm water discharges are causing or contributing to an exceedance of an applicable water quality standard, the discharger shall:
  - a. Implement corrective measures immediately following discovery that water quality standards were exceeded, followed by notification to the RWQCB by telephone as soon as possible but no later than 48 hours after the discharge has been discovered. This notification shall be followed by a report within 14-calender days to the appropriate RWQCB, unless otherwise directed by the RWQCB, describing (1) the nature and cause of the water quality standard exceedance; (2) the BMPs currently being implemented; (3) any additional

BMPs which will be implemented to prevent or reduce pollutants that are causing or contributing to the exceedance of water quality standards; and (4) any maintenance or repair of BMPs. This report shall include an implementation schedule for corrective actions and shall describe the actions taken to reduce the pollutants causing or contributing to the exceedance.

- b. The discharger shall revise its SWPPP and monitoring program immediately after the report to the RWQCB to incorporate the additional BMPs that have been and will be implemented, the implementation schedule, and any additional monitoring needed.
- c. Nothing in this section shall prevent the appropriate RWQCB from enforcing any provisions of this General Permit while the discharger prepares and implements the above report.

C. SPECIAL PROVISIONS FOR CONSTRUCTION ACTIVITY:

- 1. All dischargers shall file an NOI and pay the appropriate fee for construction activities conducted at each site as required by Attachment 2: Notice of Intent--General Instructions.
- 2. All dischargers shall develop and implement a SWPPP in accordance with Section A: Storm Water Pollution Prevention Plan. The discharger shall implement controls to reduce pollutants in storm water discharges from their construction sites to the BAT/BCT performance standard.
- 3. Discharges of non-storm water are authorized only where they do not cause or contribute to a violation of any water quality standard and are controlled through implementation of appropriate BMPs for elimination or reduction of pollutants. Implementation of appropriate BMPs is a condition for authorization of non-storm water discharges. Non-storm water discharges and the BMPs appropriate for their control must be described in the SWPPP. Wherever feasible, alternatives which do not result in discharge of nonstorm water shall be implemented in accordance with Section A.9. of the SWPPP requirements.
- 4. All dischargers shall develop and implement a monitoring program and reporting plan in accordance with Section B: Monitoring Program and Reporting Requirements.

5. All dischargers shall comply with the lawful requirements of municipalities, counties, drainage districts, and other local agencies regarding discharges of storm water to separate storm sewer systems or other watercourses under their jurisdiction, including applicable requirements in municipal storm water management programs developed to comply with NPDES permits issued by the RWQCBs to local agencies.
6. All dischargers shall comply with the standard provisions and reporting requirements contained in Section C: Standard Provisions.
7. The discharger may terminate coverage for a portion of the project under this General Permit when ownership of a portion of this project has been transferred or when a phase within this multi-phase project has been completed. When ownership has transferred, the discharger must submit to its RWQCB a Change of Information Form (COI) Attachment 4 with revised site map and the name, address and telephone number of the new owner(s). Upon transfer of title, the discharger should notify the new owner(s) of the need to obtain coverage under this General Permit. The new owner must comply with provisions of Sections A. 2. (c) and B. 2. (b) of this General Permit. To terminate coverage for a portion of the project when a phase has been completed, the discharger must submit to its RWQCB a COI with a revised map that identifies the newly delineated site.
8. The discharger may terminate coverage under this General Permit for a complete project by submitting to its RWQCB a Notice of Termination Form (NOT), and the post-construction BMPs plan according to Section A.10 of this General Permit. Note that a construction project is considered complete only when all portions of the site have been transferred to a new owner; or the following conditions have been met:
  - a. There is no potential for construction related storm water pollution,
  - b. All elements of the SWPPP have been completed,
  - c. Construction materials and waste have been disposed of properly,
  - d. The site is in compliance with all local storm water management requirements, and
  - e. A post-construction storm water management plan is in place as described in the site's SWPPP.
9. This General Permit expires five years from the date of adoption.

D. REGIONAL WATER QUALITY CONTROL BOARD (RWQCB) AUTHORITIES:

1. RWQCBs shall:
  - a. Implement the provisions of this General Permit. Implementation of this General Permit may include, but is not limited to requesting the submittal of SWPPPs, reviewing SWPPPs, reviewing monitoring reports, conducting compliance inspections, and taking enforcement actions.
  - b. Issue permits as they deem appropriate to individual dischargers, categories of dischargers, or dischargers in a geographic area. Upon issuance of such permits by a RWQCB, the affected dischargers shall no longer be regulated by this General Permit.
2. RWQCBs may require, on a case-by-case basis, the inclusion of an analysis of potential downstream impacts on receiving waterways due to the permitted construction.
3. RWQCBs may provide information to dischargers on the development and implementation of SWPPPs and monitoring programs and may require revisions to SWPPPs and monitoring programs.
4. RWQCBs may require dischargers to retain records for more than three years.
5. RWQCBs may require additional monitoring and reporting program requirements including sampling and analysis of discharges to water bodies listed in Attachment 3 to this permit. Additional requirements imposed by the RWQCB should be consistent with the overall monitoring effort in the receiving waters.
6. RWQCBs may issue individual NPDES permits for those construction activities found to be ineligible for coverage under this permit.

CERTIFICATION

The undersigned, Administrative Assistant to the Board, does hereby certify that the foregoing is a full, true, and correct copy of an order duly and regularly adopted at a meeting of the State Water Resources Control Board held on August 19, 1999.

AYE: James M. Stubchaer  
Mary Jane Forster  
John W. Brown  
Arthur G. Baggett, Jr.

NO: None

ABSENT: None

ABSTAIN: None

\_\_\_\_\_/s/\_\_\_\_\_  
Maureen Marché  
Administrative Assistant to the Board

## SECTION A: STORM WATER POLLUTION PREVENTION PLAN

### 1. Objectives

A Storm Water Pollution Prevention Plan (SWPPP) shall be developed and implemented to address the specific circumstances for each construction site covered by this General Permit. The SWPPP shall be certified in accordance with the signatory requirements of section C, Standard Provision for Construction Activities (9). The SWPPP shall be developed and amended or revised, when necessary, to meet the following objectives:

- a. Identify all pollutant sources including sources of sediment that may affect the quality of storm water discharges associated with construction activity (storm water discharges) from the construction site, and
- b. Identify non-storm water discharges, and
- c. Identify, construct, implement in accordance with a time schedule, and maintain Best Management Practices (BMPs) to reduce or eliminate pollutants in storm water discharges and authorized nonstorm water discharges from the construction site during construction, and
- d. Develop a maintenance schedule for BMPs installed during construction designed to reduce or eliminate pollutants after construction is completed (post-construction BMPs).
- e. Identify a sampling and analysis strategy and sampling schedule for discharges from construction activity which discharge directly into water bodies listed on Attachment 3. (Clean Water Act Section 303(d) [303(d)] Water Bodies listed for Sedimentation).
- f. For all construction activity, identify a sampling and analysis strategy and sampling schedule for discharges that have been discovered through visual monitoring to be potentially contaminated by pollutants not visually detectable in the runoff.

### 2. Implementation Schedule

- a. For construction activity commencing on or after adoption of this General Permit, the SWPPP shall be developed prior to the start of soil-disturbing activity in accordance with this Section and shall be implemented concurrently with commencement of soil-disturbing activities.
- b. Existing permittees engaging in construction activities covered under the terms of the previous General Construction Permit SWPPP (WQ Order No.92-08-DWQ) shall



continue to implement their existing SWPPP and shall implement any necessary revisions to their SWPPP in accordance with this Section of the General Permit in a timely manner, but in no case more than 90-calendar days from the date of adoption of this General Permit.

- c. For ongoing construction activity involving a change of ownership of property, the new owner shall review the existing SWPPP and amend if necessary, or develop a new SWPPP within 45-calendar days.
- d. Existing permittees shall revise their SWPPP in accordance with the sampling and analysis modifications prior to August 1, 2001. For ongoing construction activity involving a change of ownership the new owner shall review the existing SWPPP and amend the sampling and analysis strategy, if required, within 45 days. For construction activity commencing after the date of adoption, the SWPPP shall be developed in accordance with the modification language adopted.

3. Availability

The SWPPP shall remain on the construction site while the site is under construction during working hours, commencing with the initial construction activity and ending with termination of coverage under the General Permit.

4. Required Changes

- a. The discharger shall amend the SWPPP whenever there is a change in construction or operations which may affect the discharge of pollutants to surface waters, ground waters, or a municipal separate storm sewer system (MS4). The SWPPP shall also be amended if the discharger violates any condition of this General Permit or has not achieved the general objective of reducing or eliminating pollutants in storm water discharges. If the RWQCB determines that the discharger is in violation of this General Permit, the SWPPP shall be amended and implemented in a timely manner, but in no case more than 14-calendar days after notification by the RWQCB. All amendments should be dated and directly attached to the SWPPP.
- b. The RWQCB or local agency with the concurrence of the RWQCB may require the discharger to amend the SWPPP.

5. Source Identification

The SWPPP shall include: (a) project information and (b) pollutant source identification combined with an itemization of those BMPs specifically chosen to control the pollutants listed.

a. Project Information

- (1) The SWPPP shall include a vicinity map locating the project site with respect to easily identifiable major roadways, geographic features, or landmarks. At a minimum, the map must show the construction site perimeter, the geographic features surrounding the site, and the general topography.
- (2) The SWPPP shall include a site map(s) which shows the construction project in detail, including the existing and planned paved areas and buildings.
  - (a) At a minimum, the map must show the construction site perimeter; existing and proposed buildings, lots, roadways, storm water collection and discharge points; general topography both before and after construction; and the anticipated discharge location(s) where the storm water from the construction site discharges to a municipal storm sewer system or other water body.
  - (b) The drainage patterns across the project area must clearly be shown on the map, and the map must extend as far outside the site perimeter as necessary to illustrate the relevant drainage areas. Where relevant drainage areas are too large to depict on the map, map notes or inserts illustrating the upstream drainage areas are sufficient.
  - (c) Temporary on-site drainages to carry concentrated flow shall be selected to comply with local ordinances, to control erosion, to return flows to their natural drainage courses, and to prevent damage to downstream properties.
3. Information presented in the SWPPP may be represented either by narrative or by graphics. Where possible, narrative descriptions should be plan notes. Narrative descriptions which do not lend themselves to plan notes can be contained in a separate document which must be referenced on the plan.

b. Pollutant Source and BMP Identification

The SWPPP shall include a description of potential sources which are likely to add pollutants to storm water discharges or which may result in nonstorm water discharges from the construction site. Discharges originating from off-site which flow across or through areas disturbed by construction that may contain pollutants should be reported to the RWQCB.

The SWPPP shall:

- (1) Show drainage patterns and slopes anticipated after major grading activities are completed. Runoff from off-site areas should be prevented from flowing through areas that have been disturbed by construction unless appropriate conveyance systems are in place. The amount of anticipated storm water run-on must be considered to determine the appropriateness of the BMPs chosen. Show all calculations for anticipated storm water run-on, and describe all BMPs implemented to divert off-site drainage described in section A. 5 a. (2) (c) around or through the construction project.
- (2) Show the drainage patterns into each on-site storm water inlet point or receiving water. Show or describe the BMPs that will protect operational storm water inlets or receiving waters from contaminated discharges other than sediment discharges, such as, but not limited to: storm water with elevated pH levels from contact with soil amendments such as lime or gypsum; slurry from sawcutting of concrete or asphalt; washing of exposed aggregate concrete; concrete rinse water; building washing operations; equipment washing operations; minor street washing associated with street delineation; and/or sealing and paving activities occurring during rains.
- (3) Show existing site features that, as a result of known past usage, may contribute pollutants to storm water, (e.g., toxic materials that are known to have been treated, stored, disposed, spilled, or leaked onto the construction site). Show or describe the BMPs implemented to minimize the exposure of storm water to contaminated soil or toxic materials.
- (4) Show areas designated for the (a) storage of soil or waste, (b) vehicle storage and service areas, (c) construction material loading, unloading, and access areas, (d) equipment storage, cleaning, and maintenance areas.
- (5) Describe the BMPs for control of discharges from waste handling and disposal areas and methods of on-site storage and disposal of construction materials and construction waste. Describe the BMPs designed to minimize or eliminate the exposure of storm water to construction materials, equipment, vehicles, waste storage areas, or service areas. The BMPs described shall be in compliance with Federal, State, and local laws, regulations, and ordinances.
- (6) Describe all post-construction BMPs for the project, and show the location of each BMP on the map. (Post-construction BMPs consist of permanent features designed to minimize pollutant discharges, including sediment, from the site after construction has been completed.) Also, describe the agency or parties to be the responsible party for long-term maintenance of these BMPs.

- (7) Show the locations of direct discharge from the construction site into a Section 303(d) list water body. Show the designated sampling locations in the receiving waters, which represent the prevailing conditions of the water bodies upstream of the construction site discharge and immediately downstream from the last point of discharge.
- (8) Show the locations designated for sampling the discharge from areas identified in Section A. 5. b. (2), (3), and (4) and Section A. 5. c. (1) and (2). Samples shall be taken should visual monitoring indicate that there has been a breach, malfunction, leakage, or spill from a BMP which could result in the discharge in storm water of pollutants that would not be visually detectable, or if storm water comes into contact with soil amendments or other exposed materials or contamination and is allowed to be discharged. Describe the sampling procedure, location, and rationale for obtaining the uncontaminated sample of storm water.

c. Additional Information

- (1) The SWPPP shall include a narrative description of pollutant sources and BMPs that cannot be adequately communicated or identified on the site map. In addition, a narrative description of preconstruction control practices (if any) to reduce sediment and other pollutants in storm water discharges shall be included.
- (2) The SWPPP shall include an inventory of all materials used and activities performed during construction that have the potential to contribute to the discharge of pollutants other than sediment in storm water. Describe the BMPs selected and the basis for their selection to eliminate or reduce these pollutants in the storm water discharges.
- (3) The SWPPP shall include the following information regarding the construction site surface area: the size (in acres or square feet), the runoff coefficient before and after construction, and the percentage that is impervious (e.g., paved, roofed, etc.) before and after construction.
- (4) The SWPPP shall include a copy of the NOI, and the Waste Discharge Identification (WDID) number. Should a WDID number not be received from the SWRCB at the time construction commences, the discharger shall include proof of mailing of the NOI, e.g., certified mail receipt, copy of check, express mail receipt, etc.

- (5) The SWPPP shall include a construction activity schedule which describes all major activities such as mass grading, paving, lot or parcel improvements at the site and the proposed time frame to conduct those activities.
- (6) The SWPPP shall list the name and telephone number of the qualified person(s) who have been assigned responsibility for prestorm, poststorm, and storm event BMP inspections; and the qualified person(s) assigned responsibility to ensure full compliance with the permit and implementation of all elements of the SWPPP, including the preparation of the annual compliance evaluation and the elimination of all unauthorized discharges.

6. Erosion Control

Erosion control, also referred to as "soil stabilization" is the most effective way to retain soil and sediment on the construction site. The most efficient way to address erosion control is to preserve existing vegetation where feasible, to limit disturbance, and to stabilize and revegetate disturbed areas as soon as possible after grading or construction.

Particular attention must be paid to large mass-graded sites where the potential for soil exposure to the erosive effects of rainfall and wind is great. Mass graded construction sites may be exposed for several years while the project is being built out. Thus, there is potential for significant sediment discharge from the site to surface waters.

At a minimum, the discharger/operator must implement an effective combination of erosion and sediment control on all disturbed areas during the rainy season. These disturbed areas include rough graded roadways, slopes, and building pads. Until permanent vegetation is established, soil cover is the most cost-effective and expeditious method to protect soil particles from detachment and transport by rainfall. Temporary soil stabilization can be the single-most important factor in reducing erosion at construction sites. The discharger shall consider measures such as: covering with mulch, temporary seeding, soil stabilizers, binders, fiber rolls or blankets, temporary vegetation, permanent seeding, and a variety of other measures.

The SWPPP shall include a description of the erosion control practices, including a time schedule, to be implemented during construction to minimize erosion on disturbed areas of a construction site. The discharger must consider the full range of erosion control BMPs. The discharger must consider any additional site-specific and seasonal conditions when selecting and implementing appropriate BMPs. The above listed erosion control measures are examples of what should be considered and are not exclusive of new or innovative approaches currently available or being developed.

- a. The SWPPP shall include:

- (1) An outline of the areas of vegetative soil cover or native vegetation onsite which will remain undisturbed during the construction project.
  - (2) An outline of all areas of soil disturbance including cut or fill areas which will be stabilized during the rainy season by temporary or permanent erosion control measures, such as seeding, mulch, or blankets, etc.
  - (3) An outline of the areas of soil disturbance, cut, or fill which will be left exposed during any part of the rainy season, representing areas of potential soil erosion where sediment control BMPs are required to be used during construction.
  - (4) A proposed schedule for the implementation of erosion control measures.
- b. The SWPPP shall include a description of the BMPs and control practices to be used for both temporary and permanent erosion control measures.
- c. The SWPPP shall include a description of the BMPs to reduce wind erosion at all times, with particular attention paid to stock-piled materials.

## 7. Stabilization

- (1) All disturbed areas of the construction site must be stabilized. Final stabilization for the purposes of submitting a NOT is satisfied when:
  - All soil disturbing activities are completed AND EITHER OF THE TWO FOLLOWING CRITERIA ARE MET:
  - A uniform vegetative cover with 70 percent coverage has been established OR:
  - equivalent stabilization measures have been employed. These measures include the use of such BMPs as blankets, reinforced channel liners, soil cement, fiber matrices, geotextiles, or other erosion resistant soil coverings or treatments.
- (2) Where background native vegetation covers less than 100 percent of the surface, such as in arid areas, the 70 percent coverage criteria is adjusted as follows: If the native vegetation covers 50 percent of the ground surface, 70 percent of 50 percent ( $.70 \times .50 = .35$ ) would require 35 percent total uniform surface coverage.

8. Sediment Control

The SWPPP shall include a description or illustration of BMPs which will be implemented to prevent a net increase of sediment load in storm water discharge relative to preconstruction levels. Sediment control BMPs are required at appropriate locations along the site perimeter and at all operational internal inlets to the storm drain system at all times during the rainy season. Sediment control practices may include filtration devices and barriers (such as fiber rolls, silt fence, straw bale barriers, and gravel inlet filters) and/or settling devices (such as sediment traps or basins). Effective filtration devices, barriers, and settling devices shall be selected, installed and maintained properly. A proposed schedule for deployment of sediment control BMPs shall be included in the SWPPP. These are the most basic measures to prevent sediment from leaving the project site and moving into receiving waters. Limited exemptions may be authorized by the RWQCB when work on active areas precludes the use of sediment control BMPs temporarily. Under these conditions, the SWPPP must describe a plan to establish perimeter controls prior to the onset of rain.

During the nonrainy season, the discharger is responsible for ensuring that adequate sediment control materials are available to control sediment discharges at the downgrade perimeter and operational inlets in the event of a predicted storm. The discharger shall consider a full range of sediment controls, in addition to the controls listed above, such as straw bale dikes, earth dikes, brush barriers, drainage swales, check dams, subsurface drain, sandbag dikes, fiber rolls, or other controls. At a minimum, the discharger/operator must implement an effective combination of erosion and sediment control on all disturbed areas during the rainy season.

If the discharger chooses to rely on sediment basins for treatment purposes, sediment basins shall, at a minimum, be designed and maintained as follows:

Option 1: Pursuant to local ordinance for sediment basin design and maintenance, provided that the design efficiency is as protective or more protective of water quality than Option 3.

OR

Option 2: Sediment basin(s), as measured from the bottom of the basin to the principal outlet, shall have at least a capacity equivalent to 3,600 cubic feet of storage per acre draining into the sediment basin. The length of the basin shall be more than twice the width of the basin. The length is determined by measuring the distance between the inlet and the outlet; and the depth must not be less than three feet nor greater than five feet for safety reasons and for maximum efficiency.

OR

Option 3: Sediment basin(s) shall be designed using the standard equation:

$$As=1.2Q/Vs$$

Where: As is the minimum surface area for trapping soil particles of a certain size; Vs is the settling velocity of the design particle size chosen; and  $Q=C \times I \times A$  where Q is the discharge rate measured in cubic feet per second; C is the runoff coefficient; I is the precipitation intensity for the 10-year, 6-hour rain event and A is the area draining into the sediment basin in acres. The design particle size shall be the smallest soil grain size determined by wet sieve analysis, or the fine silt sized (0.01mm) particle, and the Vs used shall be 100 percent of the calculated settling velocity.

The length is determined by measuring the distance between the inlet and the outlet; the length shall be more than twice the dimension as the width; the depth shall not be less than three feet nor greater than five feet for safety reasons and for maximum efficiency (two feet of storage, two feet of capacity). The basin(s) shall be located on the site where it can be maintained on a year-round basis and shall be maintained on a schedule to retain the two feet of capacity;

OR

Option 4: The use of an equivalent surface area design or equation, provided that the design efficiency is as protective or more protective of water quality than Option 3.

A sediment basin shall have a means for dewatering within 7-calendar days following a storm event. Sediment basins may be fenced if safety (worker or public) is a concern.

The outflow from a sediment basin that discharges into a natural drainage shall be provided with outlet protection to prevent erosion and scour of the embankment and channel.

The discharger must consider any additional site-specific and seasonal conditions when selecting and designing sediment control BMPs. The above listed sediment control measures are examples of what should be considered and are not exclusive of new or innovative approaches currently available or being developed.

The SWPPP shall include a description of the BMPs to reduce the tracking of sediment onto public or private roads at all times. These public and private roads shall be inspected and cleaned as necessary. Road cleaning BMPs shall be discussed in the SWPPP and will not rely on the washing of accumulated sediment or silt into the storm drain system.



9. Non-Storm Water Management

Describe all non-storm water discharges to receiving waters that are proposed for the construction project. Non-storm water discharges should be eliminated or reduced to the extent feasible. Include the locations of such discharges and descriptions of all BMPs designed for the control of pollutants in such discharges. Onetime discharges shall be monitored during the time that such discharges are occurring. A qualified person should be assigned the responsibility for ensuring that no materials other than storm water are discharged in quantities which will have an adverse effect on receiving waters or storm drain systems (consistent with BAT/BCT), and the name and contact number of that person should be included in the SWPPP document.

Discharging sediment-laden water which will cause or contribute to an exceedance of the applicable RWQCB's Basin Plan from a dewatering site or sediment basin into any receiving water or storm drain without filtration or equivalent treatment is prohibited.

10. Post-Construction Storm Water Management

The SWPPP shall include descriptions of the BMPs to reduce pollutants in storm water discharges after all construction phases have been completed at the site (Post-Construction BMPs). Post-Construction BMPs include the minimization of land disturbance, the minimization of impervious surfaces, treatment of storm water runoff using infiltration, detention/retention, biofilter BMPs, use of efficient irrigation systems, ensuring that interior drains are not connected to a storm sewer system, and appropriately designed and constructed energy dissipation devices. These must be consistent with all local post-construction storm water management requirements, policies, and guidelines. The discharger must consider site-specific and seasonal conditions when designing the control practices. Operation and maintenance of control practices after construction is completed shall be addressed, including short-and long-term funding sources and the responsible party.

11. Maintenance, Inspection, and Repair

The SWPPP shall include a discussion of the program to inspect and maintain all BMPs as identified in the site plan or other narrative documents throughout the entire duration of the project. A qualified person will be assigned the responsibility to conduct inspections. The name and telephone number of that person shall be listed in the SWPPP document. Inspections will be performed before and after storm events and once each 24-hour period during extended storm events to identify BMP effectiveness and implement repairs or design changes as soon as feasible depending upon field conditions. Equipment, materials, and workers must be available for rapid response to failures and emergencies. All corrective maintenance to BMPs shall be performed as soon as possible after the conclusion of each storm depending upon worker safety.

For each inspection required above, the discharger shall complete an inspection checklist. At a minimum, an inspection checklist shall include:

- a. Inspection date.
- b. Weather information: best estimate of beginning of storm event, duration of event, time elapsed since last storm, and approximate amount of rainfall (inches).
- c. A description of any inadequate BMPs.
- d. If it is possible to safely access during inclement weather, list observations of all BMPs: erosion controls, sediment controls, chemical and waste controls, and non-storm water controls. Otherwise, list result of visual inspection at relevant outfall, discharge point, or downstream location and projected required maintenance activities.
- e. Corrective actions required, including any changes to SWPPP necessary and implementation dates.
- f. Inspectors name, title, and signature.

The dischargers shall prepare their inspection checklists using the inspection checklist form provided by the SWRCB or RWQCB or on forms that contain the equivalent information.

12. Training

Individuals responsible for SWPPP preparation, implementation, and permit compliance shall be appropriately trained, and the SWPPP shall document all training. This includes those personnel responsible for installation, inspection, maintenance, and repair of BMPs. Those responsible for overseeing, revising, and amending the SWPPP shall also document their training. Training should be both formal and informal, occur on an ongoing basis when it is appropriate and convenient, and should include training/workshops offered by the SWRCB, RWQCB, or other locally recognized agencies or professional organizations.

13. List of Contractors/Subcontractors

The SWPPP shall include a list of names of all contractors, (or subcontractors) and individuals responsible for implementation of the SWPPP. This list should include telephone numbers and addresses. Specific areas of responsibility of each subcontractor and emergency contact numbers should also be included.

14. Other Plans

This SWPPP may incorporate by reference the appropriate elements of other plans required by local, State, or Federal agencies. A copy of any requirements incorporated by reference shall be kept at the construction site.

15. Public Access

The SWPPP shall be provided, upon request, to the RWQCB. The SWPPP is considered a report that shall be available to the public by the RWQCB under section 308(b) of the Clean Water Act.

16. Preparer Certification

The SWPPP and each amendment shall be signed by the landowner (discharger) or his representative and include the date of initial preparation and the date of each amendment.

SECTION B: MONITORING PROGRAM AND REPORTING REQUIREMENTS

1. Required Changes

The RWQCB may require the discharger to conduct additional site inspections, to submit reports and certifications, or perform sampling and analysis.

2. Implementation

- a. The requirements of this Section shall be implemented at the time of commencement of construction activity (see also Section A. 2. Implementation Schedule). The discharger is responsible for implementing these requirements until construction activity is complete and the site is stabilized.
- b. For ongoing construction activity involving a change in ownership of property covered by this General Permit, the new owner must complete a NOI and implement the requirements of this Section concurrent with the change of ownership. For changes of information, the owner must follow instructions in  
C. 7. Special Provisions for Construction Activity of the General Permit.

3. Site Inspections

Qualified personnel shall conduct inspections of the construction site prior to anticipated storm events, during extended storm events, and after actual storm events to identify areas contributing to a discharge of storm water associated with construction activity. The name(s) and contact number(s) of the assigned inspection personnel shall be listed in the SWPPP. Pre-storm inspections are to ensure that BMPs are properly installed and maintained; post-storm

inspections are to assure that the BMPs have functioned adequately. During extended storm events, inspections shall be required each 24-hour period. Best Management Practices (BMPs) shall be evaluated for adequacy and proper implementation and whether additional BMPs are required in accordance with the terms of the General Permit (see language in Section A. 11. Maintenance, Inspection, and Repair). Implementation of nonstorm water discharge BMPs shall be verified and their effectiveness evaluated. One time discharges of non-storm water shall be inspected when such discharges occur.

4. Compliance Certification

Each discharger or qualified assigned personnel listed by name and contact number in the SWPPP must certify annually that construction activities are in compliance with the requirements of this General Permit and the SWPPP. This Certification shall be based upon the site inspections required in Item 3 of this Section. The certification must be completed by July 1 of each year.

5. Noncompliance Reporting

Dischargers who cannot certify compliance, in accordance with Item 4 of this Section and/or who have had other instances of noncompliance excluding exceedances of water quality standards as defined in section B. 3. Receiving Water Limitations Language, shall notify the appropriate RWQCB within 30 days. Corrective measures should be implemented immediately following discovery that water quality standards were exceeded. The notifications shall identify the noncompliance event, including an initial assessment of any impact caused by the event; describe the actions necessary to achieve compliance; and include a time schedule subject to the modifications by the RWQCB indicating when compliance will be achieved. Noncompliance notifications must be submitted within 30-calendar days of identification of noncompliance.

6. Monitoring Records

Records of all inspections, compliance certifications, and noncompliance reporting must be retained for a period of at least three years from the date generated. With the exception of noncompliance reporting, dischargers are not required to submit these records.

7. Monitoring Program for Sedimentation/Siltation

Dischargers of storm water associated with construction activity that directly enters a water body listed in Attachment 3 shall conduct a sampling and analysis program for the pollutants (sedimentation/siltation or turbidity) causing the impairment. The discharger shall monitor for the applicable parameter. If the water body is listed for sedimentation or siltation, samples should be analyzed for Settleable Solids (ml/l) and Total Suspended Solids (mg/l). Alternatively or in addition, samples may be analyzed for suspended sediment concentration according to ASTM D3977-97. If the water body is listed for turbidity, samples should be analyzed for turbidity

(NTU). Discharges that flow through tributaries that are not listed in Attachment 3 or that flow into Municipal Separate Storm Sewer Systems (MS4) are not subject to these sampling and analysis requirements. The sampling and analysis parameters and procedures must be designed to determine whether the BMPs installed and maintained prevent discharges of sediment from contributing to impairment in receiving waters.

Samples shall be collected during the first two hours of discharge from rain events which result in a direct discharge to any water body listed in Attachment 3. Samples shall be collected during daylight hours (sunrise to sunset). Dischargers need not collect more than four (4) samples per month. All samples shall be taken in the receiving waters and shall be representative of the prevailing conditions of the water bodies. Samples shall be collected from safely accessible locations upstream of the construction site discharge and immediately downstream from the last point of discharge.

For laboratory analysis, all sampling, sample preservation, and analyses must be conducted according to test procedures under 40 CFR Part 136. Field samples shall be collected and analyzed according to the specifications of the manufacturer of the sampling devices employed. Portable meters shall be calibrated according to manufacturer's specification. All field and/or laboratory analytical data shall be kept in the SWPPP document, which is to remain at the construction site at all times until a Notice of Termination has been submitted and approved.

8. Monitoring Program for Pollutants Not Visually Detectable in Storm Water

A sampling and analysis program shall be developed and conducted for pollutants which are not visually detectable in storm water discharges, which are or should be known to occur on the construction site, and which could cause or contribute to an exceedance of water quality objectives in the receiving water. Pollutants that should be considered for inclusion in this sampling and analysis program are those identified in Sections A.5.b. and A.5.c.

Construction materials and compounds that are not stored in water-tight containers under a water-tight roof or inside a building are examples of materials for which the discharger may have to implement sampling and analysis procedures. The goal of the sampling and analysis is to determine whether the BMPs employed and maintained on site are effective in preventing the potential pollutants from coming in contact with storm water and causing or contributing to an exceedance of water quality objectives in the receiving waters. Examples of construction sites that may require sampling and analysis include: sites that are known to have contaminants spilled or spread on the ground; sites where construction practices include the application of soil amendments, such as gypsum, which can increase the pH of the runoff; or sites having uncovered stockpiles of material exposed to storm water. Visual observations before, during, and after storm events may trigger the requirement to collect samples. Any breach, malfunction, leakage, or spill observed which could result in the discharge of pollutants to surface waters that *would not* be visually detectable in storm water shall trigger the collection of a sample of

discharge. Samples shall be collected at all discharge locations which drain the areas identified by the visual observations and which can be safely accessed. For sites where sampling and analysis is required, personnel trained in water quality sampling procedures shall collect storm water samples. A sufficiently large sample of storm water that has not come in contact with the disturbed soil or the materials stored or used on-site (uncontaminated sample) shall be collected for comparison with the discharge sample. Samples shall be collected during the first two hours of discharge from rain events that occur during daylight hours and which generate runoff.

The uncontaminated sample shall be compared to the samples of discharge using field analysis or through laboratory analysis. Analyses may include, but are not limited to, indicator parameters such as: pH, specific conductance, dissolved oxygen, conductivity, salinity, and TDS.

For laboratory analysis, all sampling, sample preservation, and analyses must be conducted according to test procedures under 40 CFR Part 136. Field discharge samples shall be collected and analyzed according to the specifications of the manufacturer of the sampling devices employed. Portable meters shall be calibrated according to manufacturer's specification. All field and/or analytical data shall be kept in the SWPPP document, which is to remain at the construction site at all times until a *Notice of Termination* has been submitted and approved.

## SECTION C: STANDARD PROVISIONS FOR CONSTRUCTION ACTIVITY

### 1. Duty to Comply

The discharger must comply with all of the conditions of this General Permit. Any permit noncompliance constitutes a violation of the Clean Water Act (CWA) and the Porter-Cologne Water Quality Control Act and is grounds for enforcement action and/or removal from General Permit coverage.

The discharger shall comply with effluent standards or prohibitions established under Section 307(a) of the CWA for toxic pollutants within the time provided in the regulations that establish these standards or prohibitions, even if this General Permit has not yet been modified to incorporate the requirement.

### 2. General Permit Actions

This General Permit may be modified, revoked and reissued, or terminated for cause. The filing of a request by the discharger for a General Permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance does not annul any General Permit condition.

If any toxic effluent standard or prohibition (including any schedule of compliance specified in such effluent standard or prohibition) is promulgated under Section 307(a) of the CWA for a toxic pollutant which is present in the discharge and that standard or prohibition is more stringent than any limitation on the pollutant in this General Permit, this General Permit shall be modified or revoked and reissued to conform to the toxic effluent standard or prohibition and the dischargers so notified.

3. Need to Halt or Reduce Activity Not a Defense

It shall not be a defense for a discharger in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this General Permit.

4. Duty to Mitigate

The discharger shall take all responsible steps to minimize or prevent any discharge in violation of this General Permit, which has a reasonable likelihood of adversely affecting human health or the environment.

5. Proper Operation and Maintenance

The discharger shall at all times properly operate and maintain any facilities and systems of treatment and control (and related appurtenances) which are installed or used by the discharger to achieve compliance with the conditions of this General Permit and with the requirements of Storm Water Pollution Prevention Plans (SWPPP). Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. Proper operation and maintenance may require the operation of backup or auxiliary facilities or similar systems installed by a discharger when necessary to achieve compliance with the conditions of this General Permit.

6. Property Rights

This General Permit does not convey any property rights of any sort or any exclusive privileges, nor does it authorize any injury to private property or any invasion of personal rights, nor does it authorize any infringement of Federal, State, or local laws or regulations.

7. Duty to Provide Information

The discharger shall furnish the RWQCB, State Water Resources Control Board, or USEPA, within a reasonable time, any requested information to determine compliance with this General Permit. The discharger shall also furnish, upon request, copies of records required to be kept by this General Permit.

8. Inspection and Entry

The discharger shall allow the RWQCB, SWRCB, USEPA, and/or, in the case of construction sites which discharge through a municipal separate storm sewer, an authorized representative of the municipal operator of the separate storm sewer system receiving the discharge, upon the presentation of credentials and other documents as may be required by law, to:

- a. Enter upon the discharger's premises at reasonable times where a regulated construction activity is being conducted or where records must be kept under the conditions of this General Permit;
- b. Access and copy at reasonable times any records that must be kept under the conditions of this General Permit;
- c. Inspect at reasonable times the complete construction site, including any off-site staging areas or material storage areas, and the erosion/sediment controls; and
- d. Sample or monitor at reasonable times for the purpose of ensuring General Permit compliance.

9. Signatory Requirements

- a. All Notice of Intent (NOIs), Notice of Terminations (NOTs), SWPPPs, certifications, and reports prepared in accordance with this Order submitted to the SWRCB shall be signed as follows:
  - (1) For a corporation: by a responsible corporate officer. For the purpose of this Section, a responsible corporate officer means: (a) a president, secretary, treasurer, or vice president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation, or (b) the manager of the construction activity if authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures;
  - (2) For a partnership or sole proprietorship: by a general partner or the proprietor, respectively; or
  - (3) For a municipality, State, Federal, or other public agency: by either a principal executive officer, ranking elected official, or duly authorized representative. The principal executive officer of a Federal agency includes the chief executive officer of the agency or the senior executive officer having responsibility for the



overall operations of a principal geographic unit of the agency (e.g., Regional Administrator of USEPA).

- b. All SWPPPs, reports, certifications, or other information required by the General Permit and/or requested by the RWQCB, SWRCB, USEPA, or the local storm water management agency shall be signed by a person described above or by a duly authorized representative. A person is a duly authorized representative if:
  - (1) The authorization is made in writing by a person described above and retained as part of the SWPPP; or
  - (2) The authorization specifies either an individual or a position having responsibility for the overall operation of the construction activity, such as the position of manager, operator, superintendent, or position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters for the company. (A duly authorized representative may thus be either a named individual or any individual occupying a named position).
- c. If an authorization is no longer accurate because a different individual or position has responsibility for the overall operation of the construction activity, a new authorization must be attached to the SWPPP prior to submittal of any reports, information, or certifications to be signed by the authorized representative.

10. Certification

Any person signing documents under Section C, Provision 9 above, shall make the following certification:

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, to the best of my knowledge and belief, the information submitted is, true, accurate, and complete.

I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

11. Anticipated Noncompliance

The discharger will give advance notice to the RWQCB and local storm water management agency of any planned changes in the construction activity which may result in noncompliance with General Permit requirements.

12. Penalties for Falsification of Reports

Section 309(c)(4) of the CWA provides that any person who knowingly makes any false material statement, representation, or certification in any record or other document submitted or required to be maintained under this General Permit, including reports of compliance or noncompliance shall upon conviction, be punished by a fine of not more than \$10,000 or by imprisonment for not more than two years or by both.

13. Oil and Hazardous Substance Liability

Nothing in this General Permit shall be construed to preclude the institution of any legal action or relieve the discharger from any responsibilities, liabilities, or penalties to which the discharger is or may be subject to under Section 311 of the CWA.

14. Severability

The provisions of this General Permit are severable; and, if any provision of this General Permit or the application of any provision of this General Permit to any circumstance is held invalid, the application of such provision to other circumstances and the remainder of this General Permit shall not be affected thereby.

15. Reopener Clause

This General Permit may be modified, revoked and reissued, or terminated for cause due to promulgation of amended regulations, receipt of USEPA guidance concerning regulated activities, judicial decision, or in accordance with 40 Code of Federal Regulations (CFR) 122.62, 122.63, 122.64, and 124.5.

16. Penalties for Violations of Permit Conditions

- a. Section 309 of the CWA provides significant penalties for any person who violates a permit condition implementing Sections 301, 302, 306, 307, 308, 318, or 405 of the CWA or any permit condition or limitation implementing any such section in a permit issued under Section 402. Any person who violates any permit condition of this General Permit is subject to a civil penalty not to exceed \$27,500 per calendar day of such violation, as well as any other appropriate sanction provided by Section 309 of the CWA.
- b. The Porter-Cologne Water Quality Control Act also provides for civil and criminal penalties which in some cases are greater than those under the CWA.

17. Availability

A copy of this General Permit shall be maintained at the construction site during construction activity and be available to operating personnel.

18. Transfers

This General Permit is not transferable. A new owner of an ongoing construction activity must submit a NOI in accordance with the requirements of this General Permit to be authorized to discharge under this General Permit. An owner who sells property covered by this General Permit shall inform the new owner of the duty to file a NOI and shall provide the new owner with a copy of this General Permit.

19. Continuation of Expired Permit

This General Permit continues in force and effect until a new General Permit is issued or the SWRCB rescinds this General Permit. Only those dischargers authorized to discharge under the expiring General Permit are covered by the continued General Permit.

**SWRCB AND RWQCB CONTACT LIST**

Please see Storm Water Contacts at  
<http://www.swrcb.ca.gov/stormwtr/contact.html>

NOTICE OF INTENT (NOI) TO COMPLY WITH THE TERMS  
OF THE GENERAL PERMIT TO DISCHARGE STORM WATER  
ASSOCIATED WITH CONSTRUCTION ACTIVITY

GENERAL INSTRUCTIONS

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Who Must Submit

Discharges of storm water associated with construction that results in the disturbance of one acre or more of land must apply for coverage under the General Construction Activities Storm Water Permit (General Permit). Construction activity which is a part of a larger common area of development or sale must also be permitted. (For example, if 4 acres of a 20-acre subdivision is disturbed by construction activities, and the remaining 16 acres is to be developed at a future date, the property owner must obtain a General Storm Water Permit for the 4-acre project). Construction activity includes, but is not limited to: clearing, grading, demolition, excavation, construction of new structures, and reconstruction of existing facilities involving removal and replacement that results in soil disturbance. This includes construction access roads, staging areas, storage areas, stockpiles, and any off-site areas which receive run-off from the construction project such as discharge points into a receiving water. Construction activity does not include routine maintenance to maintain original line and grade, hydraulic capacity, or original purpose of the facility.

The owner of the land where the construction activity is occurring is responsible for obtaining a permit. Owners may obtain coverage under the General Permit by filing a NOI in accordance with the following instructions. Coverage for construction activity conducted on easements (e.g., pipeline construction) or on nearby properties by agreement or permission, or by an owner or lessee of a mineral estate (oil, gas, geothermal, aggregate, precious metals, and/or industrial minerals) entitled to conduct the activities, shall be obtained by the entity responsible for the construction activity. Linear construction projects which will have construction activity occurring in one or more than one Region should contact the State Water Resources Control Board at the number listed below prior to submitting an NOI application for specific information related to the use of the NOI form.

Construction Activity Not Covered By This General Permit

Storm water discharges in the Lake Tahoe Hydrologic Unit will be regulated by a separate permit(s) adopted by the California Regional Water Quality Control Board, Lahontan Region, and will not be covered under the State Water Resources Control Board's (SWRCB) General Permit. Storm water discharges on Indian Lands will be regulated by the U.S. Environmental Protection Agency.

### Where to Apply

The NOI form, vicinity map, and appropriate fee must be mailed to the SWRCB at the following address:

State Water Resources Control Board  
Division of Water Quality  
Attn: Storm Water Permit Unit  
P.O. Box 1977  
Sacramento, CA 95812-1977

### When to Apply

Property owners proposing to conduct construction activities subject to this General Permit must file a Notice of Intent prior to the commencement of construction activity.

### Fees

The annual fee is \$700 for all construction sites submitting an NOI. Checks should be made payable to: SWRCB.

### Completing the Notice of Intent (NOI)

The submittal to obtain coverage under the General Permit must include a completed NOI Form (Notice of Intent, attached), a vicinity map, and the appropriate annual fee. The NOI must be completely and accurately filled out; the vicinity map and annual fee must be included with the NOI or the submittal is considered incomplete and will be rejected. A construction site is considered to be covered by the General Permit upon filing a complete NOI submittal, and implementation of a defensible Storm Water Pollution Prevention Plan (SWPPP). Upon receipt of a complete NOI submittal, each discharger will be sent a receipt letter containing the waste discharger's identification (WDID) number.

### Questions?

If you have any questions on completing the NOI please call the SWRCB at (916) 341-5537.

## **NOI-LINE-BY-LINE INSTRUCTIONS**

Please type or print when completing the NOI Form and vicinity map.

### **SECTION I--NOI STATUS**

Mark one of the two boxes at the top portion of the NOI. Check box 1 if the NOI is being completed for new construction. Check box 2 if the NOI is being submitted to report changes for a construction site already covered by the General Permit. An example of a change that warrants a resubmittal of the NOI is a change of total area of the construction site. The permit is non-transferable, a change of ownership requires a Notice of Termination (NOT) submittal and a new NOI. Complete only those portions of the NOI that apply to the changes (the NOI must always be signed). If box 2 is checked, the WDID number must be included.

### **SECTION II--PROPERTY OWNER**

Enter the construction site owner's official or legal name and address; contact person (if other than owner), title, and telephone number.

### **SECTION III--DEVELOPER / CONTRACTOR INFORMATION**

Enter the name of the developer's (or general contractor's) official or legal name, address, contact person, title, and telephone number. The contact person should be someone who is familiar with the construction site and is responsible for compliance and oversight of the general permit.

### **SECTION IV--CONSTRUCTION PROJECT INFORMATION**

Enter the project name, site address, county, city, (or nearest city if construction is occurring in an unincorporated area), zip code, and telephone number (if any) of the construction site. Include an emergency contact telephone or pager number. Construction site information should include latitude and longitude designations, tract numbers, and/or mile post markers, if applicable. The site contact person should be someone who is familiar with the project, site plans, SWPPP, and monitoring program. All NOIs must be accompanied by a vicinity map.

Part A: Enter the total size in acres of all areas associated with construction activity, including all access roads.

Part B: Enter the total size in acres of the area to be disturbed by construction activity and the percentage of the area listed in Part A above that this represents.

Part C: Enter the percentage of the site that is impervious (areas where water cannot soak into the ground, such as concrete, asphalt, rooftops, etc.) before and after construction.

Part D: Include tract numbers, if available.

Part E: Enter the mile post marker number at the project site location.

Part F: Indicate whether the construction site is part of a larger common plan of development or sale. For example, if the construction activity is occurring on a two-acre site which is within a development that is one acre or greater, answer yes.

Part G: Enter the name of the development (e.g. "Quail Ridge Subdivision", "Orange Valley Estates", etc.).

Part H: Indicate when construction will begin (month, day, year). When a NOI is being submitted due to a change in ownership, the commencement date should be the date the new ownership took effect.

Part I: Indicate the percentage of the total project area to be mass graded.

Part J: Enter the estimated completion dates for the mass grading activities and for the project completion.

Part K: Indicate the type(s) of construction taking place. For example, "Transportation" should be checked for the construction of roads; "Utility" should be checked for installation of sewer, electric, or telephone systems. Include a description of the major construction activities, (e.g., 20 single family homes, a supermarket, an office building, a factory, etc.)

#### SECTION V--BILLING ADDRESS

To continue coverage under the General Permit, the annual fee must be paid. Indicate where the annual fee invoice should be mailed by checking one of the following boxes:

Owner: sent to the owners address as it appears in Section II.

Developer/Contractor: sent to the developer's address as it appears in Section III.

Other: sent to a different address and enter that address in the spaces provided.

#### SECTION VI--REGULATORY STATUS

Indicate whether or not the site is subject to local erosion/sediment control ordinances. Indicate whether the erosion/sediment control plan designed to comply with the ordinance addresses the construction of infrastructure and structures in addition to grading. Identify the name and telephone number of the local agency, if applicable.



## SECTION VII--RECEIVING WATER INFORMATION

Part A: Indicate whether the storm water runoff from the construction site discharges indirectly to waters of the United States, directly to waters of the United States, or to a separate storm drain system.

Indirect discharges include discharges that may flow overland across adjacent properties or rights-of-way prior to discharging into waters of the United States.

Enter the name of the owner/operator of the relevant storm drain system, if applicable. Storm water discharges directly to waters of the United States will typically have an outfall structure directly from the facility to a river, lake, creek, stream, bay, ocean, etc. Discharges to separate storm sewer systems are those that discharge to a collection system operated by municipalities, flood control districts, utilities, or similar entities.

Part B: Enter the name of the receiving water. Regardless of point of discharge, the owner must determine the receiving water for the construction site's storm water discharge. Enter the name of the receiving water.

## SECTION VIII--IMPLEMENTATION OF NPDES PERMIT REQUIREMENTS

Part A: Indicate the status of the SWPPP, date prepared, or availability for review. Also indicate if a tentative construction schedule has been included in the SWPPP (the inclusion of a construction activity schedule is a mandatory SWPPP requirement).

Part B: Provide information concerning the status of the development of a monitoring program, a component of the SWPPP which outlines an inspection and maintenance schedule for the proposed Best Management Practices (BMPs). Provide name and phone number of program preparer.

Part C: Provide the name and phone numbers of the responsible party or parties designated to insure compliance with all elements of the General Permit and SWPPP.

## SECTION IX--VICINITY MAP AND FEE

Provide a "to scale" or "to approximate scale" drawing of the construction site and the immediate surrounding area. Whenever possible, limit the map to an 8.5" x 11" or 11" x 17" sheet of paper. At a minimum, the map must show the site perimeter, the geographic features surrounding the site, and general topography, and a north arrow. The map must also include the location of the construction project in relation to named streets, roads, intersections, or landmarks. A NOI containing a map which does not clearly indicate the location of the construction project will be rejected. Do not submit blueprints unless they meet the above referenced size limits.

## SECTION X--CERTIFICATIONS

This section must be completed by the owner or signatory agent of the construction site\*. The certification provides assurances that the NOI and vicinity map were completed in an accurate and complete fashion and with the knowledge that penalties exist for providing false information. Certification also requires the owner to comply with the provisions in the General Permit.

\* For a corporation: a responsible corporate officer (or authorized individual). For a partnership or sole proprietorship: a general partner or the proprietor, respectively. For a municipality, State, Federal, or

other public agency: either a principal executive officer, ranking elected official, or duly authorized representative.



State Water Resources Control Board  
**NOTICE OF INTENT**  
TO COMPLY WITH THE TERMS OF THE  
GENERAL PERMIT TO DISCHARGE STORM WATER  
ASSOCIATED WITH CONSTRUCTION ACTIVITY (WQ ORDER No. 99-08-DWQ)

**I. NOI STATUS (SEE INSTRUCTIONS)**

|                    |  |   |  |
|--------------------|--|---|--|
| MARK ONLY ONE ITEM | 1. <input type="checkbox"/> New Construction | 2. <input type="checkbox"/> Change of Information for WDID# |  |
|--------------------|--|---|--|

**II. PROPERTY OWNER**

|                 |                |     |                |
|-----------------|----------------|-----|----------------|
| Name            | Contact Person |     |                |
| Mailing Address | Title          |     |                |
| City            | State          | Zip | Phone<br>( ) - |

**III. DEVELOPER/CONTRACTOR INFORMATION**

|                      |                |     |                |
|----------------------|----------------|-----|----------------|
| Developer/Contractor | Contact Person |     |                |
| Mailing Address      | Title          |     |                |
| City                 | State          | Zip | Phone<br>( ) - |

**CONSTRUCTION PROJECT INFORMATION**

|  |  |   |                                 |
|--|--|---|---------------------------------|
| Site/Project Name  |  | Site Contact Person   |                                 |
| Physical Address/Location  |  | Latitude<br>°   | Longitude<br>°                  |
| City (or nearest City)   |  | Zip   | County                          |
|  |  | Site Phone Number<br>( ) -  | Emergency Phone Number<br>( ) - |
| A. Total size of construction site area:<br>_____ Acres  | C. Percent of site imperviousness (including rooftops):<br>Before Construction: _____ %<br>After Construction: _____ % |   | D. Tract Number(s): _____       |
| B. Total area to be disturbed:<br>_____ Acres (% of total _____)   |  |   | E. Mile Post Marker: _____      |
| F. Is the construction site part of a larger common plan of development or sale?<br><input type="checkbox"/> YES <input type="checkbox"/> NO   |  | G. Name of plan or development:   |                                 |
| H. Construction commencement date: ____/____/____  |  | J. Projected construction dates:<br>Complete grading: ____/____/____ Complete project: ____/____/____ |                                 |
| I. % of site to be mass graded: _____  |  |   |                                 |
| K. Type of Construction (Check all that apply):<br>1. <input type="checkbox"/> Residential    2. <input type="checkbox"/> Commercial    3. <input checked="" type="checkbox"/> Industrial    4. <input type="checkbox"/> Reconstruction    5. <input type="checkbox"/> Transportation<br>6. <input type="checkbox"/> Utility    Description: _____    7. <input type="checkbox"/> Other (Please List): _____ |  |   |                                 |

**V. BILLING INFORMATION**

|  |                 |                |
|--|-----------------|----------------|
| SEND BILL TO:<br><input type="checkbox"/> OWNER<br>(as in II. above) | Name            | Contact Person |
| <input checked="" type="checkbox"/> DEVELOPER<br>(as in III. above)  | Mailing Address | Phone/Fax      |
|  | City            | State    Zip   |

## VI. REGULATORY STATUS

- A. Has a local agency approved a required erosion/sediment control plan?..... ☐ NO ☐ YES
- Does the erosion/sediment control plan address construction activities such as infrastructure and structures?..... ☐ NO ☐ YES
- Name of local agency: \_\_\_\_\_ Phone: (     )     -     \_\_\_\_\_

- B. Is this project or any part thereof, subject to conditions imposed under a CWA Section 404 permit of 401 Water Quality Certification?..... ☐ NO ☒ YES
- If yes, provide details: \_\_\_\_\_

## VII. RECEIVING WATER INFORMATION

- A. Does the storm water runoff from the construction site discharge to (Check all that apply):

1. ☐ Indirectly to waters of the U.S.
2. ☐ Storm drain system - Enter owner's name: \_\_\_\_\_
3. ☐ Directly to waters of U.S. (e.g. , river, lake, creek, stream, bay, ocean, etc.)

- B. Name of receiving water: (river, lake, creek, stream, bay, ocean): \_\_\_\_\_

## VIII. IMPLEMENTATION OF NPDES PERMIT REQUIREMENTS

- A. STORM WATER POLLUTION PREVENTION PLAN (SWPPP) (check one)

- ☐ A SWPPP has been prepared for this facility and is available for review: Date Prepared: \_\_\_\_/\_\_\_\_/\_\_\_\_ Date Amended: \_\_\_\_/\_\_\_\_/\_\_\_\_
- ☐ A SWPPP will be prepared and ready for review by (enter date): \_\_\_\_/\_\_\_\_/\_\_\_\_
- ☐ A tentative schedule has been included in the SWPPP for activities such as grading, street construction, home construction, etc.

### MONITORING PROGRAM

- ☐ A monitoring and maintenance schedule has been developed that includes inspection of the construction BMPs before anticipated storm events and after actual storm events and is available for review.
- If checked above: A qualified person has been assigned responsibility for pre-storm and post-storm BMP inspections to identify effectiveness and necessary repairs or design changes..... ☐ YES ☐ NO

Name: \_\_\_\_\_

Phone: (     )     -     \_\_\_\_\_

- C. PERMIT COMPLIANCE RESPONSIBILITY

A qualified person has been assigned responsibility to ensure full compliance with the Permit, and to implement all elements of the Storm Water Pollution Prevention Plan including:

1. Preparing an annual compliance evaluation..... ☐ YES ☐ NO
- Name: \_\_\_\_\_ Phone: (     )     -     \_\_\_\_\_
2. Eliminating all unauthorized discharges..... ☐ YES ☐ NO

## IX. VICINITY MAP AND FEE (must show site location in relation to nearest named streets, intersections, etc.)

- Have you included a vicinity map with this submittal?..... ☐ YES ☐ NO
- Have you included payment of the annual fee with this submittal?..... ☐ YES ☐ NO

## X. CERTIFICATIONS

"I certify under penalty of law that this document and all attachments were prepared under my direction and supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine or imprisonment. In addition, I certify that the provisions of the permit, including the development and implementation of a Storm Water Pollution Prevention Plan and a Monitoring Program Plan will be complied with."

Printed Name: \_\_\_\_\_

Signature: \_\_\_\_\_

Date: \_\_\_\_\_

Title: \_\_\_\_\_

## 303d Listed Water Bodies for Sedimentation

| REGION | WATER BODY NAME             | CODE | POLLUTANT               |
|--------|-----------------------------|------|-------------------------|
| 1      | MATTOLE RIVER               | 1100 | Sedimentation/Siltation |
| 1      | TRINITY RIVER, SOUTH FORK   | 1100 | Sedimentation/Siltation |
| 1      | REDWOOD CREEK               | 1100 | Sedimentation/Siltation |
| 1      | MAD RIVER                   | 1100 | Sedimentation/Siltation |
| 1      | ELK RIVER                   | 1100 | Sedimentation/Siltation |
| 1      | EEL RIVER, SOUTH FORK       | 1100 | Sedimentation/Siltation |
| 1      | EEL RIVER, NORTH FORK       | 1100 | Sedimentation/Siltation |
| 1      | TRINITY RIVER               | 1100 | Sedimentation/Siltation |
| 1      | EEL RIVER, MIDDLE FORK      | 1100 | Sedimentation/Siltation |
| 1      | MAD RIVER                   | 2500 | Turbidity               |
| 1      | TEN MILE RIVER              | 1100 | Sedimentation/Siltation |
| 1      | NOYO RIVER                  | 1100 | Sedimentation/Siltation |
| 1      | BIG RIVER                   | 1100 | Sedimentation/Siltation |
| 1      | ALBION RIVER                | 1100 | Sedimentation/Siltation |
| 1      | NAVARRO RIVER               | 1100 | Sedimentation/Siltation |
| 1      | GARCIA RIVER                | 1100 | Sedimentation/Siltation |
| 1      | GUALALA RIVER               | 1100 | Sedimentation/Siltation |
| 1      | RUSSIAN RIVER               | 1100 | Sedimentation/Siltation |
| 1      | TOMKI CREEK                 | 1100 | Sedimentation/Siltation |
| 1      | VAN DUZEN RIVER             | 1100 | Sedimentation/Siltation |
| 1      | EEL RIVER DELTA             | 1100 | Sedimentation/Siltation |
| 1      | EEL RIVER, MIDDLE MAIN FORK | 1100 | Sedimentation/Siltation |
| 1      | ESTERO AMERICANO            | 1100 | Sedimentation/Siltation |
| 1      | NAVARRO RIVER DELTA         | 1100 | Sedimentation/Siltation |
| 1      | EEL RIVER, UPPER MAIN FORK  | 1100 | Sedimentation/Siltation |
| 1      | FRESHWATER CREEK            | 1100 | Sedimentation/Siltation |
| 1      | SCOTT RIVER                 | 1100 | Sedimentation/Siltation |
| 2      | TOMALES BAY                 | 1100 | Sedimentation/Siltation |
| 2      | NAPA RIVER                  | 1100 | Sedimentation/Siltation |
| 2      | SONOMA CREEK                | 1100 | Sedimentation/Siltation |
| 2      | PETALUMA RIVER              | 1100 | Sedimentation/Siltation |
| 2      | LAGUNITAS CREEK             | 1100 | Sedimentation/Siltation |
| 2      | WALKER CREEK                | 1100 | Sedimentation/Siltation |

|   |  |      |                         |
|---|--|------|-------------------------|
| 2 | SAN GREGORIO CREEK                       | 1100 | Sedimentation/Siltation |
| 2 | SAN FRANCISQUITO CREEK                   | 1100 | Sedimentation/Siltation |
| 2 | PESCADERO CREEK (REG 2)                  | 1100 | Sedimentation/Siltation |
| 2 | BUTANO CREEK                             | 1100 | Sedimentation/Siltation |
| 3 | MORRO BAY                                | 1100 | Sedimentation/Siltation |
| 3 | SAN LORENZO RIVER ESTUARY                | 1100 | Sedimentation/Siltation |
| 3 | SHINGLE MILL CREEK                       | 1100 | Sedimentation/Siltation |
| 3 | MOSS LANDING HARBOR                      | 1100 | Sedimentation/Siltation |
| 3 | WATSONVILLE SLOUGH                       | 1100 | Sedimentation/Siltation |
| 3 | SAN LORENZO RIVER                        | 1100 | Sedimentation/Siltation |
| 3 | ELKHORN SLOUGH                           | 1100 | Sedimentation/Siltation |
| 3 | SALINAS RIVER LAGOON (NORTH)             | 1100 | Sedimentation/Siltation |
| 3 | GOLETA SLOUGH/ESTUARY                    | 1100 | Sedimentation/Siltation |
| 3 | CARPINTERIA MARSH (EL ESTERO MARSH)      | 1100 | Sedimentation/Siltation |
| 3 | LOMPICO CREEK                            | 1100 | Sedimentation/Siltation |
| 3 | MORO COJO SLOUGH                         | 1100 | Sedimentation/Siltation |
| 3 | VALENCIA CREEK                           | 1100 | Sedimentation/Siltation |
| 3 | PAJARO RIVER                             | 1100 | Sedimentation/Siltation |
| 3 | RIDER GULCH CREEK                        | 1100 | Sedimentation/Siltation |
| 3 | LLAGAS CREEK                             | 1100 | Sedimentation/Siltation |
| 3 | SAN BENITO RIVER                         | 1100 | Sedimentation/Siltation |
| 3 | SALINAS RIVER                            | 1100 | Sedimentation/Siltation |
| 3 | CHORRO CREEK                             | 1100 | Sedimentation/Siltation |
| 3 | LOS OSOS CREEK                           | 1100 | Sedimentation/Siltation |
| 3 | SANTA YNEZ RIVER                         | 1100 | Sedimentation/Siltation |
| 3 | SAN ANTONIO CREEK (SANTA BARBARA COUNTY) | 1100 | Sedimentation/Siltation |
| 3 | CARBONERA CREEK                          | 1100 | Sedimentation/Siltation |
| 3 | SOQUEL LAGOON                            | 1100 | Sedimentation/Siltation |
| 3 | APTOS CREEK                              | 1100 | Sedimentation/Siltation |
| 4 | MUGU LAGOON                              | 1100 | Sedimentation/Siltation |
| 5 | HUMBUG CREEK                             | 1100 | Sedimentation/Siltation |
| 5 | PANOCHÉ CREEK                            | 1100 | Sedimentation/Siltation |
| 5 | FALL RIVER (PIT)                         | 1100 | Sedimentation/Siltation |
| 6 | BEAR CREEK (R6)                          | 1100 | Sedimentation/Siltation |
| 6 | MILL CREEK (3)                           | 1100 | Sedimentation/Siltation |
| 6 | HORSESHOE LAKE (2)                       | 1100 | Sedimentation/Siltation |
| 6 | BRIDGEPORT RES                           | 1100 | Sedimentation/Siltation |



|   |   |      |                         |
|---|---|------|-------------------------|
| 6 | TOPAZ LAKE                              | 1100 | Sedimentation/Siltation |
| 6 | LAKE TAHOE                              | 1100 | Sedimentation/Siltation |
| 6 | PINE CREEK (2)                          | 1100 | Sedimentation/Siltation |
| 6 | TRUCKEE RIVER                           | 1100 | Sedimentation/Siltation |
| 6 | CLEARWATER CREEK                        | 1100 | Sedimentation/Siltation |
| 6 | GRAY CREEK (R6)                         | 1100 | Sedimentation/Siltation |
| 6 | WARD CREEK                              | 1100 | Sedimentation/Siltation |
| 6 | BLACKWOOD CREEK                         | 1100 | Sedimentation/Siltation |
| 6 | GOODALE CREEK                           | 1100 | Sedimentation/Siltation |
| 6 | EAST WALKER RIVER                       | 1100 | Sedimentation/Siltation |
| 6 | HEAVENLY VALLEY CREEK                   | 1100 | Sedimentation/Siltation |
| 6 | WOLF CREEK (1)                          | 1100 | Sedimentation/Siltation |
| 6 | WEST WALKER RIVER                       | 1100 | Sedimentation/Siltation |
| 6 | HOT SPRINGS CANYON CREEK                | 1100 | Sedimentation/Siltation |
| 6 | BRONCO CREEK                            | 1100 | Sedimentation/Siltation |
| 6 | SQUAW CREEK                             | 1100 | Sedimentation/Siltation |
| 7 | IMPERIAL VALLEY DRAINS                  | 1100 | Sedimentation/Siltation |
| 7 | NEW RIVER (R7)                          | 1100 | Sedimentation/Siltation |
| 7 | ALAMO RIVER                             | 1100 | Sedimentation/Siltation |
| 8 | SAN DIEGO CREEK, REACH 1                | 1100 | Sedimentation/Siltation |
| 8 | RATHBONE (RATHBUN) CREEK                | 1100 | Sedimentation/Siltation |
| 8 | SAN DIEGO CREEK, REACH 2                | 1100 | Sedimentation/Siltation |
| 8 | UPPER NEWPORT BAY ECOLOGICAL<br>RESERVE | 1100 | Sedimentation/Siltation |
| 8 | BIG BEAR LAKE                           | 1100 | Sedimentation/Siltation |
| 8 | ELSINORE, LAKE                          | 1100 | Sedimentation/Siltation |
| 9 | SAN ELIJO LAGOON                        | 1100 | Sedimentation/Siltation |
| 9 | LOS PENASQUITOS LAGOON                  | 1100 | Sedimentation/Siltation |
| 9 | AGUA HEDIONDA LAGOON                    | 1100 | Sedimentation/Siltation |
| 9 | BUENA VISTA LAGOON                      | 1100 | Sedimentation/Siltation |

**NEW OWNER INFORMATION AND  
CHANGE OF INFORMATION (COI) FORM FOR THE  
GENERAL CONSTRUCTION PERMIT NO. CAS000002**

Owners Name: \_\_\_\_\_

Date: \_\_\_\_\_

WDID No.: \_\_\_\_\_

Date of Last NOI Change: \_\_\_\_\_

Prepared By: \_\_\_\_\_

Signature of Preparer: \_\_\_\_\_

|    | Area<br>Transferred<br>(acres) <sup>1</sup><br><br>column 1 | Area<br>Remaining<br>(acres) <sup>2</sup><br><br>column 2 | Lot/Tract<br>Numbers<br>Transferred | Contact Person and<br>Company Name of<br>New Owner(s) | Address(es) of the New Owner(s) | Phone #<br>of New Owner | Is<br>Const/Post<br>Construction<br>Complete?<br>Yes/No | Date of<br>Ownership<br>Transfer |
|----|---|---|-------------------------------------|---|---------------------------------|-------------------------|---|----------------------------------|
| 1  |   |   |                                     |   |                                 |                         |   |                                  |
| 2  |   |   |                                     |   |                                 |                         |   |                                  |
| 3  |   |   |                                     |   |                                 |                         |   |                                  |
| 4  |   |   |                                     |   |                                 |                         |   |                                  |
| 5  |   |   |                                     |   |                                 |                         |   |                                  |
| 6  |   |   |                                     |   |                                 |                         |   |                                  |
| 7  |   |   |                                     |   |                                 |                         |   |                                  |
| 8  |   |   |                                     |   |                                 |                         |   |                                  |
| 9  |   |   |                                     |   |                                 |                         |   |                                  |
| 10 |   |   |                                     |   |                                 |                         |   |                                  |

Use approximate area (in acres) if no exact figure is available.

Calculate running total in this column as follows:

Enter in column 2, line 1, the area from NOI minus the area in column 1.

Enter in column 2, line 2, the area in column 2, line 1, minus the area in line 2, column 1.

Enter in column 2, line 3, the area in column 2, line 2, minus the area in line 3, column 1, and so forth.

## **APPENDIX B**

### **BAAQMD Regulations for Soil Excavation, Reuse & Disposal**

## Final Regulation Order

### ASBESTOS AIRBORNE TOXIC CONTROL MEASURE FOR SURFACING APPLICATIONS

Section 93106. Asbestos Airborne Toxic Control Measure for Surfacing Applications.

(a) **Effective Date.** No later than November 13, 2001, each air pollution control and air quality management district must:

- (1) Implement and enforce the requirements of this section, or
- (2) Propose their own asbestos airborne toxic control measure as provided in Health and Safety Code section 39666(d).

(b) **Applicability.**

This section shall apply to any person who produces, sells, supplies, offers for sale or supply, uses, applies, or transports any of the following materials:

- (1) Aggregate material extracted from property where any portion of the property is located in a geographic ultramafic rock unit (as defined in subsection (i)(9)); or
- (2) Aggregate material extracted from property that is **NOT** located in a geographic ultramafic rock unit (as defined in subsection (i)(9)) if the material has been:
  - (A) Evaluated at the request of the Air Pollution Control Officer (APCO) and determined to be ultramafic rock or serpentine;
  - (B) Tested at the request of the APCO and determined to have an asbestos content of 0.25 percent or greater, as determined using an approved asbestos bulk test method; or
  - (C) Determined by the owner/operator of a facility to be ultramafic rock, or serpentine, or material that has an asbestos content of 0.25 percent or greater.
- (3) Any mixture of aggregate material that contains ten percent (10%) or more of any of the materials listed above in subsection (b)(1) or (b)(2).

(c) **Prohibition On the Use, Sale, and Supply of Restricted Aggregate Material.**

Unless one of the exemptions in subsection (f) applies, no person shall use, apply, sell, supply, or offer for sale or supply any restricted material (as defined in subdivision (i)(20)) for surfacing, unless it has been tested using an approved asbestos bulk test method and determined to have an asbestos content that is less than 0.25 percent.

(d) **Requirements to Provide Notice with Restricted Material.**

- (1) **Requirements for Producers of Restricted Material for Surfacing Applications:** Any producer who sells, supplies, or offers for sale or supply restricted material for surfacing that has been tested using an approved asbestos bulk test method and determined to have an asbestos content that is less than 0.25 percent must provide to the recipient of the restricted material a written receipt that contains the following information:
  - (A) The amount of restricted material that was sold or supplied;
  - (B) The date that the restricted material was sold or supplied;
  - (C) The dates that the restricted material was sampled and tested, or verification that the material is exempt under subsection (f)(7); and

- (D) A statement that the asbestos content of the restricted material is less than 0.25 percent.
- (2) **Requirements for Persons – Other than Producers – Who Sell or Supply Restricted Material for Surfacing Applications:** Any person, other than a producer, who sells, supplies, or offers for sale or supply restricted material for surfacing must provide to the recipient of the material a written receipt which specifies the following information:
- (A) The amount of restricted material that was sold or supplied;
- (B) The date that the restricted material was sold or supplied; and
- (C) A statement that the asbestos content of the restricted material is less than 0.25 percent.
- (3) **Requirements for the Sale or Supply of Restricted Materials for Non-Surfacing Applications:** Any person who sells, supplies, or offers for sale or supply restricted material for non-surfacing applications must provide with each sale or supply a written receipt containing the following statement:

**"WARNING!**

**This material may contain asbestos.**

It is unlawful to use this material for surfacing or any application in which it would remain exposed and subject to possible disturbances.

Extreme care should be taken when handling this material to minimize the generation of dust."

**(e.) Recordkeeping and Reporting Requirements.**

- (1) **Recordkeeping Requirements for Persons Who Use Restricted Material for Surfacing:** Any person who uses or applies restricted material for surfacing must retain any written receipt or other record verifying that the material has an asbestos content of less than 0.25 percent for a minimum period of seven years from the date of use or application.
- (2) **Recordkeeping Requirements for Persons Who Transport Restricted Material:** Any person who transports restricted material must maintain a copy of all receipts or records required by subsection (d) with the material at all times during transit and application.
- (3) **Recordkeeping Requirements for Persons Who Sell or Supply Restricted Material:** Any person who sells, supplies, or offers restricted material for sale or supply must retain copies of all receipts or records required by subsection (d) for a minimum period of seven years from the date of sale or supply.
- (4) **Reporting Requirements for Persons Who Use, Sell, or Supply Restricted Material:** Any person who uses restricted material for surfacing, sells, supplies, or offers restricted material for sale or supply must provide receipts and test results to the APCO for review upon request.

**(f) Exemptions.**

- (1) **Sand and Gravel Operations:** The requirements of subsections (c), (d), and (e) shall not apply to aggregate material extracted from a sand and gravel operation. A "sand and gravel operation" means any aggregate-producing facility operating in alluvial deposits.
- (2) **Roads Located at Quarries or Mines:** The requirements of subsection (c) shall not apply to roads at quarries or mines that are located in a geographic ultramafic rock unit, an ultramafic rock deposit, or a serpentine deposit, provided that the aggregate material was obtained on site from the quarry or mine property.

- (3) *Maintenance Operations on Existing Roads:* The requirements of subsections (c), (d), and (e) shall not apply to maintenance operations on any existing road surface if no additional restricted material is applied to the road surface.
- (4) *Emergency Road Repairs:* The APCO may issue a temporary exemption from the requirements of subsections (c), (d), and (e) to an applicant who demonstrates that a road repair is necessary due to a landslide, flood, or other emergency, and that the use of aggregate material other than restricted material is not feasible for this repair. The APCO shall specify the time during which such exemption shall be effective; however, no exemption shall remain in effect longer than 90 days.
- (5) *Asphalt and Concrete Materials:* The requirements of subsections (c), (d), and (e) shall not apply to restricted material that is an integral part of the production of asphalt concrete, portland cement concrete or other similarly cemented materials; or construction of an asphalt or a portland cement concrete surface as long as all of the restricted material is incorporated into or completely covered by the asphalt or portland cement concrete.
- (6) *Landfill Operations:* The use and application requirements of subsection (c) shall not apply to landfill operations, except for the surfacing of public-access roads used by vehicular traffic.
- (7) *Geologic Evaluation:* The APCO may provide an exemption from subsections (c), (d), and (e) for aggregate material extracted from within a geographic ultramafic rock unit if a registered geologist has conducted a geologic evaluation of the property from which the aggregate material is obtained and determined that serpentine or ultramafic rock is not likely to be found on the property. Before an exemption can be granted, the owner/operator must provide a copy of a report detailing the geologic evaluation to the APCO for his or her consideration.
  - (A) At a minimum, the geologic evaluation must include:
    1. A general description of the property and the proposed use;
    2. A detailed site characterization, which may include:
      - i. A physical site inspection;
      - ii. Offsite geologic evaluation of adjacent property;
      - iii. Evaluation of existing geological maps and studies of the site and surrounding area;
      - iv. Development of geologic maps of the site and vicinity;
      - v. Identification and description of geologic units, rock and soil types, and features that could be related to the presence of ultramafic rocks, serpentine, or asbestos mineralization;
      - vi. A subsurface investigation to evaluate the nature and extent of geologic materials in the subsurface where extensive vertical excavation is planned; methods of subsurface investigation may include, but are not limited to borings, test pits, trenching, and geophysical surveys;
    3. A classification of rock types found must conform to the nomenclature based on the International Union of Geological Science system;
    4. A description of the sampling procedures used;
    5. A description of the analytical procedures used, which may include mineralogical analyses, petrographic analyses, chemical analyses, or analyses for asbestos content;
    6. An archive of collected rock samples for third party examination; and
    7. A geologic evaluation report documenting observations,

methods, data, and findings; the format and content of the report should follow the Guidelines for Engineering Geologic Reports issued by the State Board of Registration for Geologists and Geophysicists.

- (B) The APCO shall respond to a request for an exemption within 90 days of the receipt of the application.
- (C) If the request for an exemption is denied, the APCO shall provide written reasons for the denial.
- (D) *Expiration of the Geologic Exemption:* If the owner/operator discovers any ultramafic rock or serpentine on the property after the exemption is granted, then:
  - 1. The owner/operator must comply with the requirements of subsections (c), (d), and (e) immediately following the discovery; and
  - 2. The owner/operator must report the discovery of ultramafic rock or serpentine to the APCO within 24 hours; and
  - 3. The exemption under subsection (f)(7) shall expire and cease to be effective.
- (8) *Limited Access Surfaces:* The APCO may provide an exemption from the requirements of subsection (c) for the use of restricted material on limited access surfaces, if the owner/operator can demonstrate that:
  - (A) No alternative aggregate materials are reasonably available; and
  - (B) The surface is not located in an area zoned or identified in a land use plan for residential, recreational, or commercial use.
  - (C) The APCO shall respond to a request for an exemption within 90 days of the receipt of the application.
  - (D) If the request for an exemption is denied, the APCO shall provide written reasons for the denial.

"Limited access surface" means any surface not subject to vehicular travel or pedestrian access that has an incline of twenty (20) percent or greater.

- (9) *Surfacing Applications in Remote Locations:*
  - (A) The APCO may provide an exemption from the requirements of subsection (c) if the owner/operator can demonstrate that:
    - 1. The surface is located in a remote location (as defined in subsection (i)(19)); and
    - 2. No alternative aggregate materials are reasonably available; and
    - 3. All aggregate material used for surfacing has been tested according to an approved asbestos bulk test method and determined to have an asbestos content of one (1.0) percent or less; except that the APCO may allow the use of restricted material with an asbestos content up to five (5.0) percent if the owner/operator can demonstrate that restricted material with an asbestos content of one (1.0) percent or less is not reasonably available.
  - (B) Before providing this exemption, the APCO shall:
    - 1. Consider the following information: county land use plans, the current use of the surrounding land, and the current and anticipated zoning designations;
    - 2. Provide public notice and solicit comments for a 30-day period;
    - 3. Require that any surface exempted pursuant to this subsection be posted with a permanent sign alerting the public to potential asbestos exposures; and



4. Require that any exemption shall be valid for no longer than three years; but if the owner/operator cannot demonstrate that all the criteria listed in subdivision (f)(9)(A) are met at the time of reapplication, the exemption shall not be renewed.
- (C) The APCO may grant an exemption when the distance from the road or other surface to the nearest receptor is less than one mile if ALL of the following criteria are met:
1. The criteria listed above in subsections (f)(9)(A)2. and 3., and subsection (f)(9)(B) must be met;
  2. Any receptor located within one mile from the road or other surface must **NOT** be any of the following:
    - i. A permanent resident (i.e., a person that resides at the receptor point for six months or more in a year), or
    - ii. A permanent business (i.e., business that operates at the receptor point for six months or more in a year), or
    - iii. A school or daycare center;
  3. The road or other surface must be located on private property;
  4. The entrance points to the road or other surface from any public thoroughfare must be gated and posted with a sign as required in subsection (f)(9)(B)3.;
  5. The applicant for the exemption must provide to the APCO an estimate of the average traffic volume on the road or other surface and the methodology used to make the estimate; and
  6. Whenever the traffic volume exceeds or is anticipated to exceed 20 vehicle passes per day, the owner/operator must:
    - i. Treat the road or other surface with a dust control method that is at least 70 percent effective; and
    - ii. Maintain records of the application and type of the dust control method for a minimum period of seven years; and
    - iii. Provide the records of the applications of the dust control method to the APCO upon request.
- (D) The APCO shall respond to any application for an exemption within 90 days of the receipt of the application.
- (E) If the request for an exemption is denied, the APCO shall provide written reasons for the denial.
- (10) *Roads Located at Construction Sites:* The requirements of subsections (c), (d), and (e) shall not apply to restricted material used for the construction of temporary road surfaces located at on-going construction sites where vehicle traffic is limited to construction personnel and equipment. This exemption does not apply to the use of restricted material for temporary roads for public use.
- (11) *Riprap:* The requirements of subsection (c) (d), and (e) shall not apply to restricted material used for riprap. "Riprap" means the material used to construct a loose assemblage of stones along a water course or shoreline to prevent erosion or provide stability.
- (g) Requirements to Perform a Geologic Evaluation or Asbestos Testing.**
- Pursuant to the requirements of Health and Safety Code section 41511, the APCO or the Executive Officer of the ARB may require an owner/operator to perform:
- (1) A geologic evaluation for the presence of ultramafic rock or serpentine on any property from which aggregate material is extracted; or

- (2) Testing for the asbestos content of any aggregate material sold, supplied, offered for sale or supply, or used for surfacing.

**(h) Applicable Test Methods.**

- (1) *Ultramafic Rock*: The ultramafic rock composition of any material shall be determined using a standard analysis technique including, but not limited to, color index assessment, microscopic examination, petrographic analysis or rock thin sections, or chemical analysis techniques, such as X-ray fluorescence spectrometry or inductively coupled plasma analysis.
- (2) *Asbestos Testing*: ARB Test Method 435 or an alternative asbestos bulk test method approved in writing by the Executive Officer of the Air Resources Board shall be used to determine compliance with this section. For the purposes of determining compliance with this section, references in ARB Test Method 435 to "serpentine aggregate" shall mean "aggregate material."
- (3) *Averaging of Test Results*: If ARB Test Method 435 or an alternative approved asbestos bulk test method has been used to perform two or more tests on any one volume of aggregate material, whether by the same or a different person, the arithmetic average of these test results shall be used to determine the asbestos content of the aggregate material.
- (4) *Sampling Frequency*: For the purposes of this section, the sampling frequency required for determining the asbestos content of any aggregate material shall be no less than one composite sample per 1000 tons of aggregate material processed, as specified in ARB Test Method 435, unless the APCO approves an alternative sampling frequency as follows:
  - (A) The APCO may approve an alternative sampling frequency after reviewing and verifying the authenticity of the following information, which shall be provided by the owner/operator of the quarry:
    1. An established history of analytical test results demonstrating that no aggregate material sampled and tested in accordance with an approved asbestos bulk test method had an asbestos content that was 0.25 percent or greater;
    2. The established history of analytical test results must include:
      - i. Test results from ten percent of the expected total yield over the life of the quarry, as stated in any permit issued pursuant to the California Surface Mining and Reclamation Act, Public Resources Code, Division 2, Chapter 9, Section 2710 et seq.; or
      - ii. Test results that cover at least two years of production of surfacing material; this production amount must be verified with sales receipts and testing results as required in subsection (e)(3);
    3. A geologic evaluation of the quarry that has been conducted in accordance with the provisions in subsection (f)(7);
    4. Any permits issued pursuant to the California Surface Mining and Reclamation Act, Public Resources Code, Division 2, Chapter 9, Section 2710 et seq.;
    5. Sales receipts retained by the quarry pursuant to subsections (d) and (e)(3).
  - (B) The APCO shall not approve any alternate sampling frequency that requires less than one test per 100,000 tons of aggregate material processed for surfacing.
  - (C) If any of the aggregate material tested is determined to have an asbestos content of 0.25 percent or greater using an alternative sampling frequency approved by the APCO, the owner/operator

must

1. Resume the sampling frequency specified in ARB Test Method 435 immediately after receiving the test results; and
2. Report the detection of asbestos and provide a copy of the analytical test results to the APCO within 48 hours after receiving the test results.

(i) **Definitions.** For the purposes of this section, the following definitions shall apply:

- (1) "Aggregate" means a mixture of mineral fragments, sand, gravel, cobbles, rocks, stones, or similar minerals that may or may not be crushed or screened. "Aggregate" does not include elemental metals, gemstones, petroleum products, organic materials, or mineral ore to be processed offsite of the property from which it was extracted.
- (2) "Alluvial deposit" means any deposit of sediments laid down by running water including, but not limited to, streams and rivers.
- (3) "APCO" means the executive officer, air pollution control officer; or the designee of the executive officer or air pollution control officer of any air pollution control or air quality management district created or continued in existence pursuant to Part 3 (commencing with section 40000), Division 26, Health and Safety Code;
- (4) "Approved asbestos bulk test method" means ARB Test Method 435 or an alternative asbestos bulk test method approved in writing by the Executive Officer of the Air Resources Board.
- (5) "ARB" means the California Air Resources Board.
- (6) "ARB Test Method 435" means the test method specified in title 17, California Code of Regulations, section 94147.
- (7) "Asbestos" means asbestiforms of the following minerals: chrysotile (fibrous serpentine), crocidolite (fibrous riebeckite), amosite (fibrous cummingtonite-grunerite), fibrous tremolite, fibrous actinolite, and fibrous anthophyllite.
- (8) "Decoration/landscaping" means the application or use of aggregate materials for aesthetic purposes.
- (9) "Geographic ultramafic rock unit" means a geographic area that is designated as an ultramafic rock unit or ultrabasic rock unit, including the unit boundary line, on any of the maps referenced in Appendix A.
- (10) "Geologic evaluation" means an evaluation of a property, as specified in subsection (f)(7), to determine the presence of various rock types, including ultramafic rock, serpentinite, or other metamorphic derivatives of ultramafic rock.
- (11) "Limited access surface" means any surface not subject to vehicular travel or pedestrian access that has an incline greater than twenty (20) percent.
- (12) "Non-surfacing applications" means any application of aggregate material that will not remain a part of the uppermost layer, such as fill, base rock, or drain rock.
- (13) "Owner/operator" or "person" includes, but is not limited to:
  - (A) An individual, trust, firm, joint stock company, business concern, partnership, limited liability company, association, or corporation including, but not limited to, a government corporation;
  - (B) Any city, county, district, commission, the state or any department, agency, or political subdivision thereof, any interstate body, and the federal government or any department or agency thereof to the extent permitted by law; or
  - (C) A project proponent and any of its contractors or subcontractors.
- (14) "Producer" means any person that extracts and processes aggregate material from the ground.

- (15) "Property" means any real property including, but not limited to, any contiguous parcel or parcels of land and anything attached to, or erected on it.
- (16) "Quarry" means a facility or operation that obtains stone from the earth by means of cutting, digging, excavating, or blasting.
- (17) "Receipt" means any written acknowledgement that a specified amount of restricted material was received, delivered, or purchased. Receipts include, but are not limited to, bills of sale, bills of lading, and notices of transfer.
- (18) "Registered geologist" means an individual that is currently licensed as a geologist with the State of California, Department of Consumer Affairs, Board of Geology and Geophysicists.
- (19) "Remote location" means any location that is at least one (1.0) mile from the location of a receptor. "Receptor" includes, but is not limited to, any hospital, school, day care center, work site, business, residence, and permanent campground. The distance to the nearest receptor is to be measured from the outermost limit of the area to be disturbed or road surface, whichever is closer.
- (20) "Restricted material" means any of the following:
- (A) Aggregate material extracted from property where any portion of the property is located in a geographic ultramafic rock unit (as defined in subsection (i)(9)); and
  - (B) Aggregate material extracted from property that is NOT located in a geographic ultramafic rock unit (as defined in subsection (i)(9)) if the material has been:
    - 1. Evaluated at the request of the Air Pollution Control Officer (APCO) and determined to be ultramafic rock or serpentine;
    - 2. Tested at the request of the APCO and determined to have an asbestos content of 0.25 percent or greater; or
    - 3. Determined by the owner/operator of a facility to be ultramafic rock, serpentine, or aggregate material that has an asbestos content of 0.25 percent or greater.
  - (C) Any mixture of aggregate material that contains ten percent (10%) or more of any of the materials listed above in subsections (i)(20)(A) or (i)(20)(B), or any combination thereof, shall also be considered "restricted material."
- (21) "Riprap" means material used to construct a loose assemblage of stones along a water course or shoreline to prevent erosion or provide stability.
- (22) "Road surface" means the traveled way of a road and any shoulder which extends up to ten (10) feet from the edge of the traveled way.
- (23) "Sand and gravel operation" means any aggregate-producing facility operating in alluvial deposits.
- (24) "Serpentine" means any form of the following hydrous magnesium silicate minerals: antigorite, lizardite, and chrysotile.
- (25) "Serpentinite" means a rock consisting almost entirely of serpentine, although small amounts of other minerals such as magnetite, chromite, talc, brucite, and tremolite-actinolite may also be present. "Serpentinite" is a metamorphic derivative of the ultramafic rocks, peridotite, pyroxenite, or dunite.
- (26) "Surfacing" means the act of providing or creating a temporary or permanent covering for a surface used for pedestrians, motor vehicles, non-motor vehicles, decoration, landscaping, soil stabilization, or erosion control. Examples of surfaces include, but are not limited to, roads, road shoulders, streets, access roads, alleys, lanes, driveways, parking lots, playgrounds, trails, squares, plazas, and fairgrounds. For the purposes of this section, "surfacing" does not include creating a covering composed of

asphalt concrete or portland cement concrete.

- (27) "Ultrabasic rock" means ultramafic rock.
- (28) "Ultramafic rock" means an igneous rock composed of 90 percent or greater of one or a combination of the following iron/magnesium-rich, dark-colored silicate minerals: olivine, pyroxene, or more rarely amphibole. For the purposes of this section, "ultramafic rock" includes the following rock types: dunite, pyroxenite, and peridotite; and their metamorphic derivatives.

NOTE: Authority cited: Sections 39600, 39601, 39650, 39658, 39659, 39666, and 41511, Health and Safety Code. Reference: Sections 39650, 39658, 39659, 39666, and 41511, Health and Safety Code.

## **APPENDIX A**

### **California Department of Conservation Division of Mines and Geology**

#### **AVAILABLE GEOLOGIC MAPS FOR CALIFORNIA**

##### **GEOLOGIC ATLASES OF CALIFORNIA Scale 1:250,000**

GEOLOGIC ATLAS OF CALIFORNIA: ALTURAS  
Compiled by Gay, T.E. and others, 1958

GEOLOGIC ATLAS OF CALIFORNIA: BAKERSFIELD  
Compiled by Smith, A.R., 1964 (reprinted 1992)

GEOLOGIC ATLAS OF CALIFORNIA: DEATH VALLEY  
Compiled by Streitz, R.L. and Stinson, M.C., 1974 (reprinted 1991)

GEOLOGIC ATLAS OF CALIFORNIA: FRESNO  
Compiled by Matthews, R.A. and Burnett, J.L., 1965 (reprinted 1991)

GEOLOGIC ATLAS OF CALIFORNIA: LONG BEACH  
Compiled by Jennings, C.W., 1962 (reprinted 1992)

GEOLOGIC ATLAS OF CALIFORNIA: LOS ANGELES  
Compiled by Jennings, C.W. and Strand, R.G., 1969 (reprinted 1991)

GEOLOGIC ATLAS OF CALIFORNIA: MARIPOSA  
Compiled by Strand, R.G., 1967 (reprinted 1991)

GEOLOGIC ATLAS OF CALIFORNIA: NEEDLES  
Compiled by Bishop, C.C., 1963 (reprinted 1992)

GEOLOGIC ATLAS OF CALIFORNIA: REDDING  
Compiled by Strand, R.G., 1962

GEOLOGIC ATLAS OF CALIFORNIA: SALTON SEA  
Compiled by Jennings, C.W., 1967 (reprinted 1992)

GEOLOGIC ATLAS OF CALIFORNIA: SAN LUIS OBISPO  
Compiled by Jennings, C.W., 1958 (reprinted 1992)

GEOLOGIC ATLAS OF CALIFORNIA: SAN DIEGO - EL CENTRO  
Compiled by Strand, R.G., 1962 (reprinted 1992)

GEOLOGIC ATLAS OF CALIFORNIA: SANTA ANA  
Compiled by Rogers, T.H., (reprinted 1992)

GEOLOGIC ATLAS OF CALIFORNIA: SANTA CRUZ  
Compiled by Jennings, C.W. and Strand, R.G., 1958 (reprinted 1992)

GEOLOGIC ATLAS OF CALIFORNIA: SANTA MARIA  
Compiled by Jennings, C.W., 1959 (reprinted 1992)

GEOLOGIC ATLAS OF CALIFORNIA: UKIAH

Compiled by Jennings, C.W. and Strand, R.G., 1960 (reprinted 1992)  
GEOLOGIC ATLAS OF CALIFORNIA: WALKER LAKE  
Compiled by Koenig, J.B., 1963 (reprinted 1992)

**REGIONAL GEOLOGIC MAP SERIES** Scale 1:250,000

GEOLOGIC MAP OF THE SACRAMENTO QUADRANGLE  
(set of four sheets)

Compiled by Wagner, D.L. and others, 1981

GEOLOGIC MAP OF THE SANTA ROSA QUADRANGLE  
(set of five sheets)

Compiled by Wagner and D.L., Bortugno, E.J. (reprinted 1999)

GEOLOGIC MAP OF THE SAN BERNARDINO QUADRANGLE  
(set of five sheets)

Compiled by Bortugno, E.J., and Spittler, T.E. (reprinted 1998)

GEOLOGIC MAP OF THE WEED QUADRANGLE  
(set of four sheets)

By Wagner, D.L. and Saucedo, G.J., 1987

GEOLOGIC MAP OF THE SAN FRANCISCO-SAN JOSE QUADRANGLE  
(set of five sheets)

By Wagner, D.L., Bortugno, E.J. and McJunkin, R.D., 1990  
Color-coded faults

**LOCAL GEOLOGIC MAPS**

AREAS MORE LIKELY TO CONTAIN NATURALLY-OCCURRING ASBESTOS  
IN WESTERN EL DORADO COUNTY, CALIFORNIA

By Ron Churchill, March 2000

Scale 1:100,000

SERPENTINITE SURVEY OF LAKE COUNTY, CALIFORNIA – MAP A,  
ULTRAMAFIC, ULTRABASIC, AND SERPENTINE ROCK AND SOILS OF LAKE  
COUNTY,

Adopted: March 2, 1992

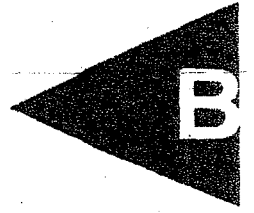
Scale: 1:100,000

Top of page | ATCM's

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*A department of the California Environmental Protection Agency*

# APPENDIX



B

## Final Regulation Order

### ASBESTOS AIRBORNE TOXIC CONTROL MEASURE FOR CONSTRUCTION, GRADING, QUARRYING, AND SURFACE MINING OPERATIONS

Section 93105. Asbestos Airborne Toxic Control Measure for Construction, Grading, Quarrying, and Surface Mining Operations.

**(a) Effective Date.**

- (1) No later than 120 days after the approval of this section by the Office of Administrative Law, each air pollution control and air quality management district must:
  - (A) Implement and enforce the requirements of this section; or
  - (B) Propose their own asbestos airborne toxic control measure as provided in Health & Safety Code section 39666(d).
- (2) *Pre-existing Operations:* The owner/operator of any project in which the construction, grading, quarrying, or surface mining operation started before the effective date of this section shall comply with this section by:
  - (A) The date the district begins implementing and enforcing this section as required in subsection (a)(1)(A); or
  - (B) The compliance date specified in the airborne toxic control measure adopted by the district as required in subsection (a)(1)(B).

**(b) Applicability.** Unless one of the specific exemptions specified in subsection (c) applies, this section shall apply to any construction, grading, quarrying, or surface mining operation on any property that meets any of the following criteria:

- (1) Any portion of the area to be disturbed is located in a geographic ultramafic rock unit; or
- (2) Any portion of the area to be disturbed has naturally-occurring asbestos, serpentine, or ultramafic rock as determined by the owner/operator, or the Air Pollution Control Officer (APCO); or
- (3) Naturally-occurring asbestos, serpentine, or ultramafic rock is discovered by the owner/operator, a registered geologist, or the APCO in the area to be disturbed after the start of any construction, grading, quarrying, or surface mining operation.

**(c) General Exemptions.**

- (1) *Geologic Evaluation:* The APCO may provide an exemption from this section for any property that meets the criterion in subsection (b)(1) if a registered geologist has conducted a geologic evaluation of the property and determined that no serpentine or ultramafic rock is likely to be found in the area to be disturbed. Before an exemption can be granted, the owner/operator must provide a copy of a report detailing the geologic evaluation to the APCO for his or her consideration.
  - (A) At a minimum, the geologic evaluation must include:
    1. A general description of the property and the proposed use;
    2. A detailed site characterization which may include:
      - i. A physical site inspection;
      - ii. Offsite geologic evaluation of adjacent property;
      - iii. Evaluation of existing geological maps and studies of the



- site and surrounding area;
- iv. Development of geologic maps of the site and vicinity;
- v. Identification and description of geologic units, rock and soil types, and features that could be related to the presence of ultramafic rocks, serpentine, or asbestos mineralization; and
- vi. A subsurface investigation to evaluate the nature and extent of geologic materials in the subsurface where vertical excavation is planned; methods of subsurface investigation may include, but are not limited to borings, test pits, trenching, and geophysical surveys;
- 3. A classification of rock types found must conform to the nomenclature based on the International Union of Geological Science system;
- 4. A description of the sampling procedures used;
- 5. A description of the analytical procedures used, which may include mineralogical analyses, petrographic analyses, chemical analyses, or analyses for asbestos content;
- 6. An archive of collected rock samples for third party examination; and
- 7. A geologic evaluation report documenting observations, methods, data, and findings; the format and content of the report should follow the Guidelines for Engineering Geologic Reports issued by the State Board of Registration for Geologists and Geophysicists.
- (B) The district may request any additional tests or other information needed to evaluate an application for exemption.
- (C) The district shall grant or deny a request for an exemption within 90 days of the receipt of a complete application.
- (D) If the request for an exemption is denied, the APCO shall provide written reasons for the denial.
- (E) *Expiration of the Geologic Exemption:* If the owner/operator discovers any naturally-occurring asbestos, serpentine, or ultramafic rock in the area to be disturbed after the exemption is granted, then:
  - 1. The owner/operator must comply with the requirements of this section;
  - 2. The owner/operator must report the discovery of the naturally-occurring asbestos, serpentine, or ultramafic rock to the APCO no later than the next business day; and
  - 3. The exemption under subsection (c)(1) shall expire and cease to be effective.
- (2) If a method is developed to accurately demonstrate that property located in a geographic ultramafic rock unit has no detectable asbestos in the area to be disturbed, then the ARB Executive Officer shall propose to the Board for adoption a regulatory amendment allowing the method to be utilized, as appropriate, to obtain an exemption from the requirements specified in this section.
- (3) *Agriculture and Timber Harvesting:* This section shall not apply to agricultural operations or timber harvesting except for construction of roads and buildings. Construction of roads is subject to the requirements of subsection (e) if the road is part of a construction or grading operation, quarry, or surface mine, and is subject to the requirements of subsection (d) if the road is not part of a construction or grading operation, quarry, or surface mine.

- (4) *Homeowners and Tenants:* Individuals engaged in covered activities on residential property they own or occupy are exempt from subsections (e)(1) and (e)(3)(A).
- (5) *Sand and Gravel Operations:* The APCO may provide an exemption for crushing, screening and conveying equipment, stockpiles, and off-site material transport at a sand and gravel operation if the operation processes only materials from an alluvial deposit.
  - (A) The district shall grant or deny a request for an exemption within ninety (90) days of the receipt of a complete application.
  - (B) If the request for an exemption is denied, the APCO shall provide written reasons for the denial.
- (d) **Requirements for Road Construction and Maintenance.** These requirements shall apply to roads that are not part of a construction or grading project, quarry, or surface mine.
  - (1) No person shall conduct any road construction or maintenance activities that disturb any area that meets any criterion listed in subsections (b)(1) or (b)(2) unless all of the following conditions are met.
    - (A) The APCO is notified in writing at least fourteen (14) days before the beginning of the activity or in accordance with a procedure approved by the district.
    - (B) All the following dust control measures are implemented during any road construction or maintenance activity:
      - 1. Unpaved areas subject to vehicle traffic must be stabilized by being kept adequately wetted, treated with a chemical dust suppressant, or covered with material that contains less than 0.25 percent asbestos;
      - 2. The speed of any vehicles and equipment traveling across unpaved areas must be no more than fifteen (15) miles per hour unless the road surface and surrounding area is sufficiently stabilized to prevent vehicles and equipment traveling more than 15 miles per hour from emitting dust that is visible crossing the project boundaries;
      - 3. Storage piles and disturbed areas not subject to vehicular traffic must be stabilized by being kept adequately wetted, treated with a chemical dust suppressant, or covered with material that contains less than 0.25 percent asbestos; and
      - 4. Activities must be conducted so that no track-out from any road construction project is visible on any paved roadway open to the public.
    - (C) Equipment and operations must not cause the emission of any dust that is visible crossing the project boundaries.
  - (2) No person shall conduct any road construction or maintenance activity that disturbs the ground surface in an area that meets the criteria in subsection (b)(3) unless:
    - (A) The APCO is notified no later than the next business day of the discovery that the area meets the criteria in subsection (b)(3); and
    - (B) The requirements of subsections (d)(1)(B) through (d)(1)(C), are implemented within twenty-four (24) hours of the discovery.
  - (3) *Exemptions from the Requirements for Road Construction and Maintenance.* The following exemptions may apply in addition to the applicable general exemptions specified in subsection (c).
    - (A) *Emergency Road Repairs:* Subsection (d)(1)(A) shall not apply when construction of a road or firebreak, or a road repair is necessary due to a landslide, flood, or other emergency or to mitigate a condition that constitutes an imminent hazard to the public. The owner/operator shall notify the APCO no later than the

next business day of the action taken and the condition establishing the applicability of this subsection.

- (B) *Remote locations:* The APCO may provide an exemption from the requirements of subsection (d) for any activity which will occur at a remote location.

1. The district shall grant or deny a request for an exemption within ninety (90) days of the receipt of a complete application.
2. If the request for an exemption is denied, the APCO shall provide written reasons for the denial.

**(e) Requirements for Construction and Grading Operations.**

- (1) *Areas of one acre or less meeting the criteria in subsections (b)(1) or (b)(2):* No person shall engage in any construction or grading operation on property where the area to be disturbed is **one (1.0) acre or less** unless all of the following dust mitigation measures are initiated at the start and maintained throughout the duration of the construction or grading activity:

- (A) Construction vehicle speed at the work site must be limited to fifteen (15) miles per hour or less;
- (B) Prior to any ground disturbance, sufficient water must be applied to the area to be disturbed to prevent visible emissions from crossing the property line;
- (C) Areas to be graded or excavated must be kept adequately wetted to prevent visible emissions from crossing the property line;
- (D) Storage piles must be kept adequately wetted, treated with a chemical dust suppressant, or covered when material is not being added to or removed from the pile;
- (E) Equipment must be washed down before moving from the property onto a paved public road; and
- (F) Visible track-out on the paved public road must be cleaned using wet sweeping or a HEPA filter equipped vacuum device within twenty-four (24) hours.

- (2) *Areas greater than one acre meeting the criteria in subsections (b)(1) or (b)(2):* No person shall engage in any construction or grading operation on property where the area to be disturbed is **greater than one (1.0) acre** unless:

- (A) An Asbestos Dust Mitigation Plan for the operation has been:
  1. Submitted to and approved by the district before the start of any construction or grading activity; and
  2. The provisions of that dust mitigation plan are implemented at the beginning and maintained throughout the duration of the construction or grading activity; and
- (B) For a project started before the effective date of this section for which an asbestos dust mitigation plan was submitted at least sixty (60) days before the effective date, and for which the district has not yet approved the asbestos dust mitigation plan:
  1. The measures in subsection (e)(1) must be implemented and maintained until the district-approved asbestos dust mitigation plan is implemented; and
  2. The provisions of the district-approved asbestos dust mitigation plan must be implemented within fourteen (14) days of district approval of the plan and maintained throughout the remainder of the construction or grading activity.

- (3) *Property that meets the criteria in subsection (b)(3):* No person shall

engage in any construction or grading operation unless the following requirements are met:

- (A) The owner/operator notifies the district of the discovery of naturally-occurring asbestos, serpentine, or ultramafic rock no later than the next business day;
  - (B) The dust mitigation measures in subsection (e)(1) are implemented within twenty-four (24) hours after determining that the property meets the criteria in subsection (b)(3); and
  - (C) For operations in which the area to be disturbed is **one (1.0) acre or less**, the dust mitigation measures in subsection (e)(1) are maintained throughout the duration of the construction or grading activity; or
  - (D) For operations in which the area to be disturbed is **greater than one (1.0) acre**, the owner/operator must:
    - 1. Submit an asbestos dust mitigation plan to the district within fourteen (14) days of the discovery of naturally-occurring asbestos, serpentine, or ultramafic rock;
    - 2. Maintain the dust mitigation measures in subsection (e)(1) until the provisions of the district-approved asbestos dust mitigation plan are implemented;
    - 3. Implement the provisions of the district-approved asbestos dust mitigation plan within fourteen (14) days of district approval of the plan; and
    - 4. Maintain the provisions of the district-approved asbestos dust mitigation plan throughout the remainder of the construction or grading activity.
- (4) *Asbestos Dust Mitigation Plans:* An Asbestos Dust Mitigation Plan must specify dust mitigation practices which are sufficient to ensure that no equipment or operation emits dust that is visible crossing the property line, and must include one or more provisions addressing **each** of the following topics.
- (A) Track-out prevention and control measures which shall include:
    - 1. Removal of any visible track-out from a paved public road at any location where vehicles exit the work site; this shall be accomplished using wet sweeping or a HEPA filter equipped vacuum device at the end of the work day or at least one time per day; and
    - 2. Installation of one or more of the following track-out prevention measures:
      - i. A gravel pad designed using good engineering practices to clean the tires of exiting vehicles;
      - ii. A tire shaker;
      - iii. A wheel wash system;
      - iv. Pavement extending for not less than fifty (50) consecutive feet from the intersection with the paved public road; or
      - v. Any other measure as effective as the measures listed above.
  - (B) Keeping active storage piles adequately wetted or covered with tarps.
  - (C) Control for disturbed surface areas and storage piles that will remain inactive for more than seven (7) days, which shall include one or more of the following:
    - 1. Keep the surface adequately wetted;

2. Establishment and maintenance of surface crusting sufficient to satisfy the test in subsection (h)(6);
  3. Application of chemical dust suppressants or chemical stabilizers according to the manufacturers' recommendations;
  4. Covering with tarp(s) or vegetative cover;
  5. Installation of wind barriers of fifty (50) percent porosity around three (3) sides of a storage pile;
  6. Installation of wind barriers across open areas; or
  7. Any other measure as effective as the measures listed above.
- (D) Control for traffic on on-site unpaved roads, parking lots, and staging areas which shall include:
1. A maximum vehicle speed limit of fifteen (15) miles per hour or less; and
  2. One or more of the following:
    - i. Watering every two hours of active operations or sufficiently often to keep the area adequately wetted;
    - ii. Applying chemical dust suppressants consistent with manufacturer's directions;
    - iii. Maintaining a gravel cover with a silt content that is less than five (5) percent and asbestos content that is less than 0.25 percent, as determined using an approved asbestos bulk test method, to a depth of three (3) inches on the surface being used for travel; or
    - iv. Any other measure as effective as the measures listed above.
- (E) Control for earthmoving activities which shall include one or more of the following:
1. Pre-wetting the ground to the depth of anticipated cuts;
  2. Suspending grading operations when wind speeds are high enough to result in dust emissions crossing the property line, despite the application of dust mitigation measures;
  3. Application of water prior to any land clearing; or
  4. Any other measure as effective as the measures listed above.
- (F) *Control for off-site transport.* The owner/operator shall ensure that no trucks are allowed to transport excavated material off-site unless:
1. Trucks are maintained such that no spillage can occur from holes or other openings in cargo compartments; and
  2. Loads are adequately wetted and either:
    - i. Covered with tarps; or
    - ii. Loaded such that the material does not touch the front, back, or sides of the cargo compartment at any point less than six inches from the top and that no point of the load extends above the top of the cargo compartment.
- (G) *Post construction stabilization of disturbed areas.* Upon completion of the project, disturbed surfaces shall be stabilized using one or more of the following methods:
1. Establishment of a vegetative cover;
  2. Placement of at least three (3.0) inches of non-asbestos-containing material;

3. Paving;
  4. Any other measure deemed sufficient to prevent wind speeds of ten (10) miles per hour or greater from causing visible dust emissions.
- (H) *Air monitoring for asbestos (if required by the APCO).*
1. If required by the district APCO, the plan must include an air-monitoring component.
  2. The air monitoring component shall specify the following:
    - i. Type of air sampling device(s);
    - ii. Siting of air sampling device(s);
    - iii. Sampling duration and frequency; and
    - iv. Analytical method.
  - (I) *Frequency of reporting:* The plan shall state how often the items specified in subsection (e)(5)(B), and any other items identified in the plan, will be reported to the district.
- (5) *Recordkeeping and Reporting Requirements.*
- (A) *Recordkeeping Requirements:* The owner/operator shall maintain all of the following records for at least seven (7) years following the completion of the construction project:
1. The results of any air monitoring conducted at the request of the APCO;
  2. The documentation for any geologic evaluation conducted on the property for the purposes of obtaining an exemption, except the archive of collected samples which may be discarded at the expiration of the exemption or one (1) year after the exemption is granted whichever is less; and
  3. The results of any asbestos bulk sampling that meets any of the following conditions:
    - i. The asbestos bulk sampling was conducted by the owner/operator to document the applicability of or compliance with this section, or
    - ii. The asbestos bulk sampling was done at the request of the district APCO.
- (B) *Reporting Requirements:* The owner/operator of any grading or construction operation subject to this section shall submit the following to the District:
1. The results of any air monitoring conducted at the request of the APCO; and
  2. The results of any asbestos bulk sampling that meets any of the following conditions:
    - i. Asbestos bulk sampling conducted by the owner/operator to document applicability of or compliance with this section; or
    - ii. Asbestos bulk sampling done at the request of the APCO.
- (f) **Requirements for Quarrying and Surface Mining Operations.**
- (1) No person shall engage in any quarrying or surface mining operation that meets the criteria of subsections (b)(1) or (b)(2) unless an Asbestos Dust Mitigation Plan for the operation has been submitted to and approved by the District and the fugitive dust mitigation measures specified in the Plan are implemented and maintained throughout the duration of any quarrying or surface mining operation except,

(A) *Pre-existing Operations*: The owner or operator of any quarrying or surface mining operation that was in operation before the date this section is implemented as determined pursuant to subsection (a) that has not obtained district approval of the asbestos dust mitigation plan may continue operating if all the following conditions are met:

1. The owner/operator has submitted an asbestos dust mitigation plan to the district at least sixty (60) days prior to the date specified in subsection (a);
2. The owner/operator implements all of the dust mitigation measures specified in subsections (f)(2)(B) and (f)(2)(C) by the effective date specified in subsection (a) and maintains them until the provisions of an approved asbestos dust mitigation plan are implemented; and
3. The owner/operator implements the provisions of the asbestos dust mitigation plan within fourteen (14) days following district approval of the plan.

(B) *Mineral exploration activities*: Mineral exploration activities as defined in the California Public Resources Code section 2714(d) in an area meeting any of the conditions of subsection (b) are not required to submit an asbestos dust mitigation plan but shall instead implement and maintain the following measures throughout the duration of the activity:

1. Limit vehicle speeds on the site to fifteen (15) miles per hour or less;
2. Apply sufficient water during any ground disturbance to prevent visible dust from crossing the property line;
3. Keep disturbed areas and storage piles adequately wetted until they are permanently stabilized;
4. Install a track-out prevention device designed to prevent track-out onto any paved public road;
5. Clean up any visible track-out at the end of the workday or at a minimum within twenty-four (24) hours; and
6. Cover, treat with a chemical dust suppressant, or otherwise stabilize any disturbed areas when operations cease for more than seven (7) days.

(2) The owner/operator of any quarry or surface mine that meets any of the criteria in subsection (b)(3) shall:

(A) Notify the APCO no later than the next business day of the discovery.

(B) Implement all the following measures within twenty-four (24) hours following the discovery:

1. Keep stock and working piles adequately wetted during the addition and removal of material;
2. Keep on-site unpaved roads, parking lots, and staging areas stabilized using one of the following measures:
  - i. Adequately wetted; or
  - ii. Controlled using dust palliatives or suppressants; or
  - iii. paving; or
  - iv. Covered to a depth of three (3) inches with gravel that contains less than 0.25 percent asbestos as determined using an approved asbestos bulk test method;
3. Keep exposed areas and inactive stockpiles that are prone to mechanical or wind disturbances:

- i. Adequately wetted; or
    - ii. Controlled using dust palliatives or suppressants, paving, wind berms or breaks; or
    - iii. Covered with tarps or material that contains less than 0.25 percent asbestos as determined using an approved asbestos bulk test method;
  - 4. Ensure that materials to be quarried, excavated, or graded are adequately wetted;
  - 5. Ensure that all loads are adequately wetted before and during truck loading operations;
  - 6. Ensure that all trucks transporting materials off-site meet the conditions of either paragraph i or paragraph ii at the time the truck leaves the site:
    - i. Loads are adequately wetted and covered with tarps; or
    - ii. Loads are adequately wetted and the material does not touch the front back or sides of the cargo compartment at any point less than six (6) inches from the top and no point of the load extends above the top of the cargo compartment; and
  - 7. Limit vehicle speeds within the quarry or surface mining operation to fifteen (15) miles per hour or less.
- (C) Implement all of the following measures within fourteen (14) days of the determination that the operation meets any of the criteria in subsection (b)(3).
- 1. Measures to ensure that material being excavated, crushed, screened, loaded, transferred or conveyed does not result in any dust that is visible crossing the property line.
  - 2. Measures to ensure that no grinding mill, screening operation, or transfer point on a belt conveyor discharges into the air any visible emissions other than uncombined water vapor, for a period aggregating more than three minutes in any one hour which are:
    - i. Fifty percent as dark or darker in shade as that designated as number one on the Ringlemann Chart, as published by the United States Bureau of Mines; or
    - ii. Of such opacity as to obscure an observers view to a degree equal to or greater than smoke as described in subsection (f)(2)(C)2.i. or ten (10) percent opacity.
  - 3. Measures to ensure that no crusher discharges into the air any visible emissions other than uncombined water vapor, for a period aggregating more than three minutes in any one hour which are:
    - i. Seventy-five percent as dark or darker in shade as that designated as number one on the Ringlemann Chart, as published by the United States Bureau of Mines; or
    - ii. Of such opacity as to obscure an observers view to a degree equal to or greater than smoke as described in subsection (f)(3)(C)3.i. or fifteen (15) percent opacity.
  - 4. Measures for material handling sufficient to meet the requirements of subsections (f)(2)(C)1. through (f)(2)(C)3. Such measures may include the following:
    - i. Installation and operation of spraybars on all conveyors; and
    - ii. Installation of shrouds at all drop points.



5. Track-out control and prevention measures which shall include:
    - i. Installation of a gravel pad, grizzly, tire washing system, or paving at least fifty (50) feet of the access road, and
    - ii. Cleaning any visible track-out off the paved public road using wet sweeping or a HEPA filter equipped vacuum device at the end of each workday.
  6. Stabilization of all on-site roads, parking lots, and staging areas open to the public by one of the following methods:
    - i. Pave with asphalt or concrete, or
    - ii. Treat with a chemical dust suppressant applied according to manufacturers directions, or
    - iii. Maintain a gravel cover that has a depth of at least three (3) inches and contains less than 0.25 percent asbestos as determined using an approved asbestos bulk test method.
- (D) Submit an Asbestos Dust Mitigation Plan to the District within fourteen (14) days and maintain the measures specified in subsections (f)(2)(B) and (f)(2)(C) until the asbestos dust mitigation measures in the district-approved Asbestos Dust Mitigation Plan are implemented.
- (3) An Asbestos Dust Mitigation Plan required by subsections (f)(1) and (f)(2)(D) must include sections which address each of the following topics.
- (A) A Fugitive Dust Mitigation Component which shall, at a minimum, include the measures specified in subsections (f)(2)(B) and (f)(2)(C), unless the APCO determines that it is appropriate to add, omit, or modify these measures depending on site-specific parameters. The plan shall also require that:
1. Equipment and operations do not emit dust that is visible crossing the property line;
  2. Crushers do not discharge into the air any visible emissions other than uncombined water vapor, for a period aggregating more than three minutes in any one hour, which is:
    - i. Seventy-five percent as dark or darker in shade as that designated as number one on the Ringlemann Chart, as published by the United States Bureau of Mines; or
    - ii. Of such opacity as to obscure an observers view to a degree equal to or greater than smoke as described in subsection (f)(3)(A)2.i. or fifteen (15) percent opacity; and
  3. Grinding mills, screening operations, and transfer points on belt conveyors do not discharge into the air any visible emissions other than uncombined water vapor, for a period aggregating more than three minutes in any one hour, which is:
    - i. Fifty percent as dark or darker in shade as that designated as number one on the Ringlemann Chart, as published by the United States Bureau of Mines; or
    - ii. Of such opacity as to obscure an observers view to a degree equal to or greater than smoke as described in subsection (f)(3)(A)3.i. or ten (10) percent opacity.
- (B) *Air monitoring for asbestos (if required by the APCO).*
1. If required by the district APCO, the plan must include an air monitoring component.
  2. The air monitoring component shall specify the following:

- i. Type of air sampling device(s);
  - ii. Siting of air sampling device(s);
  - iii. Sampling duration and frequency; and
  - iv. Analytical method.
- (C) *Frequency of reporting.* The plan shall state how often the items specified in subsection (f)(5)(B), and any other items identified in the plan, will be reported to the district.
- (4) Upon petition by the owner/operator the APCO may approve the use of requirements or restrictions established under other regulatory programs to meet the requirements of subsection (f) under the following conditions:
  - (A) The requirements or restrictions are equivalent to or more stringent than the requirements of subsection (f); and
  - (B) The requirements or restrictions are enforceable by the APCO.
- (5) *Recordkeeping and Reporting Requirements:* The owner/operator of a surface mining or quarrying operation subject to this section must comply with the following recordkeeping and reporting requirements.
  - (A) *Recordkeeping Requirements:* The owner/operator shall maintain all of the following records for at least seven (7) years:
    1. The results of any air monitoring conducted at the request of the APCO;
    2. The documentation for any geologic evaluation conducted on the property for the purpose of obtaining an exemption except, the archive of collected rock samples which may be discarded at the expiration of the exemption or one (1) year after the district granted or denied the exemption, whichever comes first; and
    3. The results of any asbestos bulk sampling that meets any of the following conditions:
      - i. The asbestos bulk sampling was conducted by the owner/operator to document the applicability of, or compliance with this section; or
      - ii. The asbestos bulk sampling was done at the request of the district APCO.
  - (B) *Reporting Requirements:* The owner/operator shall submit the following to the District:
    1. The results of any air monitoring conducted at the request of the APCO;
    2. The documentation of any geologic evaluation conducted on the property in question; and
    3. The results of any asbestos bulk sampling that meets any of the following conditions:
      - i. Asbestos bulk sampling conducted by the owner/operator to document applicability of or compliance with this section; or
      - ii. Asbestos bulk sampling done at the request of the district APCO.
- (g) **Air Monitoring for Asbestos.** Pursuant to the requirements of Health and Safety Code section 41511:
  - (1) Air monitoring may be required by the district APCO.
  - (2) The APCO may revise the asbestos dust mitigation plan on the basis of the results of the air monitoring.
- (h) **Test Methods.**

- (1) *Ultramafic Rock*: The ultramafic rock composition of any material shall be determined using standard analysis techniques including, but not limited to, color index assessment, microscopic examination, petrographic analysis or rock thin sections, or chemical analysis techniques, such as X-ray fluorescence spectrometry or inductively coupled plasma analysis.
- (2) *Bulk Sampling Methods*: ARB Test Method 435, or an alternative asbestos bulk test method approved in writing by the Executive Officer of the California Air Resources Board, shall be used to determine the asbestos content of a bulk sample. For the purposes of determining compliance with this section, references in ARB Test Method 435 to "serpentine aggregate" shall mean "gravel" or other "bulk materials" to be tested for asbestos content.
- (3) *Analysis of Air Samples*: Analysis of all air samples shall follow the analytical method specified by the United States Environmental Protection Agency, Asbestos Hazard Emergency Response Act (AHERA) criteria for asbestos (40 CFR, Part 763 Subpart E, Appendix A, adopted October 30, 1987), with the following exceptions:
  - (A) The analytical sensitivity shall be 0.001 structures per cubic centimeter (0.001 s/cc); and
  - (B) All asbestos structures with an aspect ratio greater than three to one (3 to 1) shall be counted irrespective of length.
- (4) The results of the analysis of air samples shall be reported as transmission electron microscopy (TEM) asbestos structures per cubic centimeter (s/cc).
- (5) *Adequately Wetted*: Field determination of "adequately wetted" shall be as follows:
  - (A) If the district-approved asbestos dust mitigation plan has specified a percent moisture content for specific materials the determination shall be as specified in the district-approved asbestos dust mitigation plan; or
  - (B) If no moisture threshold is specified in a district-approved asbestos dust mitigation plan, a sample of at least one (1) quart in volume shall be taken from the top three (3) inches of a road, or bare area or from the surface of a stockpile. The sample shall be poured out from a height of four (4) feet onto a clean hard surface. The material shall be considered to be adequately wetted if there is no observable dust emitted when the material is dropped.
- (6) *Surface Crusting*: "Measurement of the stability of surface crusting on horizontal surfaces" shall be as follows:
  - (A) Where a visible crust exists, drop a steel ball with a diameter of 15.9 millimeters (0.625 inches) and a mass ranging from 16 to 17 grams from a distance of 30 centimeters (one foot) directly above (at a 90 degree angle perpendicular to) the ground surface. If blowsand (thin deposits of loose grains covering less than 50 percent of the surface that have not originated from the surface being tested) is present, clear the blowsand from the surfaces to be tested before dropping the steel ball.
  - (B) A sufficient crust is determined to exist if, when the ball is dropped according to subsection (h)(6)(A), the ball does not sink into the surface so that it is partially or fully surrounded by loose grains and, upon removing the ball, the surface on which it was dropped has not been pulverized so that loose grains are visible.
  - (C) Drop the ball three times each in three representative test areas within a survey area measuring 1 foot by 1 foot that represents a random portion of the surface being evaluated. The test area shall be deemed to have passed if at least two of the three times the ball was dropped, the results met the criteria in subsection (h)(6)(B). If

all three test areas pass, the area shall be deemed to be "sufficiently crusted".

(i) **Definitions.** For the purposes of this section, the following definitions shall apply:

- (1) "Access road" means any road extending from a public thoroughfare onto the property of a construction project, quarry, or surface mining operation.
- (2) "Adequately wetted" means sufficiently moistened with water to minimize the release of particulate matter into the ambient air as determined by the test method(s) in subsection (h)(5).
- (3) "Agricultural operation" means activities necessary for the growing and harvesting of crops or raising of fowl or animals.
- (4) "APCO" means the executive officer, air pollution control officer, or the designee of the executive officer or air pollution control officer of any air pollution control or air quality management district created or continued in existence pursuant to Part 3 (commencing with section 40000), Division 26, Health and Safety Code.
- (5) "Approved asbestos bulk test method" means ARB Test Method 435 or an alternative asbestos bulk test method approved in writing by the Executive Officer of the California Air Resources Board.
- (6) "ARB" means the California Air Resources Board.
- (7) "ARB Test Method 435" means the test method specified in title 17, California Code of Regulations, section 94147.
- (8) "Asbestos" means asbestiforms of the following minerals: chrysotile (fibrous serpentine), crocidolite (fibrous riebeckite), amosite (fibrous cummingtonite-grunerite), fibrous tremolite, fibrous actinolite, and fibrous anthophyllite.
- (9) "Asbestos-containing material" means any material that has an asbestos content of 0.25 percent or greater.
- (10) "Asbestos Dust Mitigation Plan" means a detailed written document specifying measures that would be implemented to minimize the emissions of asbestos-laden dust.
- (11) "Carry-out" or "track-out" means any bulk material that adheres to and agglomerates on the exterior surfaces of motor vehicles, haul trucks, and/or equipment, including tires, and that has fallen or been deposited onto a paved public roadway.
- (12) "Construction," "grading," "construction or grading operation" and "construction or grading activity" mean any surface disturbance conducted with powered equipment or any related activity, including, but not limited to, all surface and subsurface cuts and fills, excavation, trenching, stockpiling, bulldozing, and landfills.
- (13) "District" means any air pollution control or air quality management district created or continued in existence pursuant to Part 3 (commencing with section 40000), Division 26, Health and Safety Code.
- (14) "Geographic ultramafic rock unit" means a geographic area that is designated as an ultramafic rock unit or ultrabasic rock unit, including the unit boundary line, on any of the maps referenced in Appendix A.
- (15) "Geologic evaluation" means an evaluation of a property to determine the presence of various types of rocks, including ultramafic rock, serpentinite, or other metamorphic derivatives of ultramafic rock.
- (16) "Gravel pad" means a layer of gravel, rock, or crushed rock which is at least one inch or larger in diameter and less than five (5) percent silt content, maintained at the point of intersection of a paved public roadway and a work site entrance to dislodge mud, dirt, and debris from tires of motor vehicles and haul trucks prior to leaving a worksite.
- (17) "Grizzly" means a device used to dislodge mud, dirt, and debris from the tires and undercarriage of motor vehicles and haul trucks prior to leaving

the work site.

- (18) "HEPA filter" means a High Efficiency Particulate Air filter used to remove particles less than one (1) micron in aerodynamic diameter and operates at removal efficiencies of 99.9 percent or greater.
- (19) "Naturally-occurring asbestos" means asbestos that has not been processed in an asbestos mill.
- (20) "Owner/operator" or "person" includes, but is not limited to:
  - (A) An individual, trust, firm, joint stock company, business concern, partnership, limited liability company, association, or corporation including, but not limited to, a government corporation;
  - (B) Any city, county, district, commission, the state or any department, agency, or political subdivision thereof, any interstate body, and the federal government or any department or agency thereof to the extent permitted by law; or
  - (C) A project proponent and any of its contractors or subcontractors.
- (21) "Paving" means creating a cover consisting of portland cement, asphalt concrete, or chip seal.
- (22) "Project Boundaries" means the right-of-way and any construction easements adjacent to and necessary for the purposes of a specific road construction project or maintenance activity.
- (23) "Property" means any real property including, but not limited to, any contiguous parcel or parcels of land and anything attached to, or erected on it.
- (24) "Quarrying" means the act of obtaining stone from the earth by means of cutting, digging, excavating, or blasting and includes processes used to convert the excavated material into commercial products.
- (25) "Registered geologist" means an individual that is currently licensed as a geologist with the State of California, Department of Consumer Affairs, Board of Geology and Geophysicists.
- (26) "Remote location" means any location that is at least one (1.0) mile from the location of a receptor. "Receptor" includes, but is not limited to, any hospital, school, day care center, work site, business, residence, and permanent campground. The distance to the nearest receptor is to be measured from the outermost limit of the area to be disturbed or road surface, whichever is closer.
- (27) "Road Construction and Maintenance" means the activities undertaken to build roads, highways, railroads, bridges, culverts, drains and other works incidental to road or highway construction, and maintenance activities that involve grading or excavation. Road Construction and Maintenance does not include the construction of rest stops, maintenance buildings, or parking lots. These excluded activities are subject to the requirements of subsection (e).
- (28) "Road surface" means the traveled way of a road and any shoulder which may extend up ten (10) feet from the edge of the traveled way.
- (29) "Sand and Gravel Operation" means any facility operating in alluvial deposits.
- (30) "Serpentine" means any form of the following hydrous magnesium silicate minerals: antigorite, lizardite, and chrysotile.
- (31) "Serpentinite" means a rock consisting almost entirely of serpentine, although small amounts of other minerals such as magnetite, chromite, talc, brucite, and tremolite-actinolite may also be present. "Serpentinite" is a metamorphic derivative of the ultramafic rocks, peridotite, pyroxenite, or dunite.
- (32) "Surface mining" means all, or any part of, the process involved in the mining of minerals on mined lands by removing overburden and mining

directly from the mineral deposit, open-pit mining of minerals naturally exposed, mining by the auger method, dredging and quarrying, or surface work incident to an underground mine. "Surface mining" includes, but is not limited to, in place distillation or retorting or leaching, the production and disposal of mining waste, prospecting and exploratory activities or any activity subject to regulation under the Surface Mining and Reclamation Act of 1975, Public Resources Code section 2700 et seq.

- (33) "Ultrabasic rock" means ultramafic rock.
- (34) "Ultramafic rock" means an igneous rock composed of 90 percent or greater of one or a combination of the following iron/magnesium-rich, dark-colored silicate minerals: olivine, pyroxene, or more rarely amphibole. For the purposes of this section, "ultramafic rock" includes the following rock types: dunite, pyroxenite, and peridotite; and their metamorphic derivatives.
- (35) "Visible emissions" means any particulate matter that is visually detectable without the aid of instruments other than corrective lenses.

NOTE: Authority cited: Sections 39600, 39601, 39650, 39658, 39659, 39666, and 41511, Health and Safety Code. Reference: Sections 39650, 39658, 39659, 39666, and 41511, Health and Safety Code.

#### APPENDIX A

##### California Department of Conservation Division of Mines and Geology

#### AVAILABLE GEOLOGIC MAPS FOR CALIFORNIA

##### GEOLOGIC ATLASES OF CALIFORNIA Scale 1:250,000

###### GEOLOGIC ATLAS OF CALIFORNIA: ALTURAS

Compiled by Gay, T.E. and others, 1958

###### GEOLOGIC ATLAS OF CALIFORNIA: BAKERSFIELD

Compiled by Smith, A.R., 1964 (reprinted 1992)

###### GEOLOGIC ATLAS OF CALIFORNIA: DEATH VALLEY

Compiled by Streitz, R.L. and Stinson, M.C., 1974 (reprinted 1991)

###### GEOLOGIC ATLAS OF CALIFORNIA: FRESNO

Compiled by Matthews, R.A. and Burnett, J.L., 1965 (reprinted 1991)

###### GEOLOGIC ATLAS OF CALIFORNIA: KINGMAN

Compiled by Jennings, C.W., 1961

###### GEOLOGIC ATLAS OF CALIFORNIA: LONG BEACH

Compiled by Jennings, C.W., 1962 (reprinted 1992)

###### GEOLOGIC ATLAS OF CALIFORNIA: LOS ANGELES

Compiled by Jennings, C.W. and Strand, R.G., 1969 (reprinted 1991)

###### GEOLOGIC ATLAS OF CALIFORNIA: MARIPOSA

Compiled by Strand, R.G., 1967 (reprinted 1991)

###### GEOLOGIC ATLAS OF CALIFORNIA: NEEDLES

Compiled by Bishop, C.C., 1963 (reprinted 1992)

###### GEOLOGIC ATLAS OF CALIFORNIA: REDDING

Compiled by Strand, R.G., 1962

###### GEOLOGIC ATLAS OF CALIFORNIA: SALTON SEA

Compiled by Jennings, C.W., 1967 (reprinted 1992)

###### GEOLOGIC ATLAS OF CALIFORNIA: SAN LUIS OBISPO

Compiled by Jennings, C.W., 1958 (reprinted 1992)

GEOLOGIC ATLAS OF CALIFORNIA: SAN DIEGO - EL CENTRO  
Compiled by Strand, R.G., 1962 (reprinted 1992)  
GEOLOGIC ATLAS OF CALIFORNIA: SANTA ANA  
Compiled by Rogers, T.H., (reprinted 1992)  
GEOLOGIC ATLAS OF CALIFORNIA: SANTA CRUZ  
Compiled by Jennings, C.W. and Strand, R.G., 1958 (reprinted 1992)  
GEOLOGIC ATLAS OF CALIFORNIA: SANTA MARIA  
Compiled by Jennings, C.W., 1959 (reprinted 1992)  
GEOLOGIC ATLAS OF CALIFORNIA: TRONA  
Compiled by Jennings, C.W., 1962  
GEOLOGIC ATLAS OF CALIFORNIA: UKIAH  
Compiled by Jennings, C.W. and Strand, R.G., 1960 (reprinted 1992)  
GEOLOGIC ATLAS OF CALIFORNIA: WALKER LAKE  
Compiled by Koenig, J.B., 1963 (reprinted 1992)  
GEOLOGIC ATLAS OF CALIFORNIA: WESTWOOD  
Compiled by Lyndon, P.A. and others, 1960

**REGIONAL GEOLOGIC MAP SERIES** Scale 1:250,000

GEOLOGIC MAP OF THE CHICO QUADRANGLE  
(set of five sheets)  
By Saucedo, G.J. and Wagner, D.L., 1992  
GEOLOGIC MAP OF THE SACRAMENTO QUADRANGLE  
(set of four sheets)  
Compiled by Wagner, D.L. and others, 1981  
GEOLOGIC MAP OF THE SANTA ROSA QUADRANGLE  
(set of five sheets)  
Compiled by Wagner, D.L. and Bortugno, E.J. (reprinted 1999)  
GEOLOGIC MAP OF THE SAN BERNARDINO QUADRANGLE  
(set of five sheets)  
Compiled by Bortugno, E.J. and Spittler, T.E. (reprinted 1998)  
GEOLOGIC MAP OF THE WEED QUADRANGLE  
(set of four sheets)  
By Wagner, D.L. and Saucedo, G.J., 1987  
GEOLOGIC MAP OF THE SAN FRANCISCO-SAN JOSE QUADRANGLE  
(set of five sheets)  
By Wagner, D.L., Bortugno, E.J. and McJunkin, R.D., 1990  
Color-coded faults

**LOCAL GEOLOGIC MAPS**

AREAS MORE LIKELY TO CONTAIN NATURALLY-OCCURRING ASBESTOS  
IN WESTERN EL DORADO COUNTY, CALIFORNIA  
By Ron Churchill, March 2000  
Scale 1:100,000

SERPENTINITE SURVEY OF LAKE COUNTY, CALIFORNIA - MAP A,  
ULTRAMAFIC, ULTRABASIC, AND SERPENTINE ROCK AND SOILS OF LAKE  
COUNTY,  
Adopted: March 2, 1992  
Scale: 1:100,000

Top of page | ATCM's

*A department of the California Environmental Protection Agency*

## **APPENDIX C**

### **Migratory Bird Permit Memorandum**





# United States Department of the Interior

FISH AND WILDLIFE SERVICE  
Washington, D.C. 20240

MBPM-1

Date: APR 15 2003

## MIGRATORY BIRD PERMIT MEMORANDUM

**SUBJECT:** A Migratory Bird Permit (MBP) Memorandum Series

**PURPOSE:** The purpose of the MBP Memorandum series is to clarify regulations and other existing migratory bird permit policy to ensure internally consistent implementation of the migratory bird permit program.

**AUTHORITY:** The authority for the MBP Memorandum series is the Migratory Bird Treaty Act (16 U.S.C. 703-712) and the Bald and Golden Eagle Protection Act (16 U.S.C. 668-668d). The series will be authorized in Part 725, Chapter 1, of the Fish and Wildlife Service Manual.

**SCOPE:** Migratory Bird Permit Memoranda will (1) clarify existing migratory bird and eagle permit regulations, policy, or matters of science, and (2) transmit internal guidelines and procedures for implementing such policy to the Regional Migratory Bird Permit Offices. Service policy that establishes binding agency requirements, instructions, or directives that affect the rights of citizens or the authorities of agencies must undergo public notice and review prior to finalization and will not be established via the MBP Memorandum series. The MBP Memorandum series will not be used to avoid publication in the Service Manual. As regulations and Service Manual chapters on migratory bird and eagle permits are developed and updated, provisions from the MBP Memorandum series will be incorporated, as appropriate, and specific MBP memoranda will be repealed as necessary.

**APPLICABILITY:** These memoranda transmit policy and guidance to personnel in the Service who are responsible for administering, and in some cases enforcing, migratory bird and eagle permits pursuant to 50 CFR parts 21 and 22, respectively.

### **RESPONSIBILITY:**

A. Development. Memoranda will be developed by the Division of Migratory Bird Management in consultation with the Regional Migratory Bird Offices, the Division of Law Enforcement, and any program office that may be affected by a memorandum.

B. Signature. Memoranda will be signed by the Director.

C. Distribution. Upon signature, the Division of Migratory Bird Management will electronically transmit each memorandum to each Regional Director; the Assistant Director and each Assistant Regional Director for Migratory Birds and State Programs; the Assistant Director and each Assistant Regional Director for Law Enforcement; and others as appropriate. It is the recipient's responsibility to ensure that copies are provided to all personnel with migratory bird permit issuance and enforcement responsibility.

**AVAILABILITY:** Migratory Bird Permit Memoranda will be available from the Division of Migratory Bird Management and the Regional Migratory Bird Offices, and will be published on the web.

Deputy

DIRECTOR



# United States Department of the Interior

BIOMIMETIC RESEARCH  
Washington, Washington, DC 20240

2003

## MIGRATORY BIRD PERMIT MEMORANDUM

**SUBJECT:** Nest Destruction

**PURPOSE:** The purpose of the memorandum is to clarify the application of the Migratory Bird Treaty Act (MBTA) to migratory bird nest destruction, and to provide guidance for advising the public regarding this issue.

**POLICY:** The MBTA does not contain any prohibition that applies to the destruction of a migratory bird nest alone (without birds or eggs), provided that no possession occurs during the destruction. To minimize MBTA violations, Service employees should make every effort to inform the public of how to minimize the risk of taking migratory bird species whose nesting behaviors make it difficult to determine occupancy status or continuing nest dependency.

The MBTA specifically protects migratory bird nests from *possession, sale, purchase, barter, transport, import, and export, and take*. The other prohibitions of the MBTA – *capture, pursue, hunt, and kill* – are inapplicable to nests. The regulatory definition of *take*, as defined by 50 CFR 10.12, *means to pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to pursue hunt, shoot, wound, kill, trap, capture, or collect*. Only *collect* applies to nests.

While it is illegal to collect, possess, and by any means transfer possession of any migratory bird nest, the MBTA does not contain any prohibition that applies to the destruction of a bird nest alone (without birds or eggs), provided that no possession occurs during the destruction. The MBTA does not authorize the Service to issue permits in situations in which the prohibitions of the Act do not apply, such as the destruction of unoccupied nests. (Some unoccupied nests are legally protected by statutes other than the MBTA, including nests of threatened and endangered migratory bird species and bald and golden eagles, within certain parameters.)

However, the public should be made aware that, while destruction of a nest by itself is not prohibited under the MBTA, nest destruction that results in the unpermitted take of migratory birds or their eggs, is illegal and fully prosecutable under the MBTA.

Due to the biological and behavioral characteristics of some migratory bird species, destruction of their nests entails an elevated degree of risk of violating the MBTA. For example, colonial nesting birds are highly vulnerable to disturbance; the destruction of unoccupied nests during or near the nesting season could result in a significant level of take. Another example involves

ground nesting species such as burrowing owls and bank swallows, which nest in cavities in the ground, making it difficult to detect whether or not their nests are occupied by eggs or nestlings or are otherwise still essential to the survival of the juvenile birds. The Service should make every effort to raise public awareness regarding the possible presence of birds and the risk of violating the MBTA, the Endangered Species Act (ESA), and the Bald and Golden Eagle Protection Act (BGEPA), and should inform the public of factors that will help minimize the likelihood that take would occur should nests be destroyed (i.e., when active nesting season normally occurs).

The Service should also take care to discern that persons who request MBTA permits for nest destruction are not targeting nests of endangered or threatened species or bald or golden eagles, so that the public can be made aware of the prohibitions of the ESA and the BGEPA against nest destruction.

In situations where it is necessary (i.e., for public safety) to remove (destroy) a nest that is occupied by eggs or nestlings or is otherwise still essential to the survival of a juvenile bird, and a permit is available pursuant to 50 CFR parts 13 and 21, the Service may issue a permit to take individual birds.



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Director

## **APPENDIX D**

### **Requirements for Contractor Biologist**

**Qualifications Section**  
**of the**  
**Draft**  
**Santa Clara Valley Water District**  
**Guidelines for Complying with the**  
**Migratory Bird Treaty Act**  
**and Other Statutes Relating to Birds**  
**August 2004**

## **QUALIFICATIONS**

### **District Biologist**

The District Biologist is a Santa Clara Valley Water District biologist specializing in wildlife resources and at the level of Biologist II or greater. The specific minimum qualifications for Biologist II are listed below. In addition, the biologist must possess educational and professional training in ornithology, natural resources management, ecology, habitat assessment, principals of wildlife management or conservation biology, and wildlife management techniques. The District Biologist must be familiar with the species of birds and bird resources they are likely to encounter on District projects. The District Biologist must have sufficient background to design sampling protocols, collect and organize ornithological data, analyze data and report findings in a meaningful way. District biologists must have at least 5 years experience managing wildlife with at least part of that time devoted to non-game migratory birds. District Biologists must be familiar with the guidelines and capable of making appropriate decisions in the field.

#### **BIOLOGIST II**

##### *Knowledge of:*

Principles and practices of planning, organizing and managing biological investigations and research. Specific quantitative techniques to evaluate resource functions and values. Computer programs and their biological resource applications. Monitoring techniques and data evaluation in order to develop and implement mitigation and monitoring programs.

##### *Ability to:*

Interpret and explain applicable environmental laws and regulations. Analyze and evaluate complex biological data and technical reports in order to make recommendations based on results and findings.

##### *Experience and Training Guidelines*

Any combination of experience and training that would likely provide the required knowledge and abilities is qualifying. A typical way to obtain the knowledge and abilities would be:

##### *Experience*

Three years of experience performing biological, ecological or other related scientific research.

##### *Training*

Equivalent to a Bachelors degree from an accredited college or university with major course work in biological or natural sciences, ecology or a related field. Directly related experience may be substituted for the college requirement on the basis of one and one-half years of experience for one year of education to a maximum of four years.

### **Managing Biologist**

Managing Biologists are consulting biologists specializing in wildlife resources and hired by the District to manage migratory bird resources in place of the District Biologist. The managing Biologist must meet the same qualifications as the District Biologist listed above.

## Qualified Biologist

Qualified Biologists are professional biologists in any of the categories below who meet the minimum qualifications. The Qualified Biologist must possess educational and or professional training in ornithology, habitat assessment and principals of wildlife management or conservation biology. The Qualified Biologist must be familiar with the species of birds and bird resources they are likely to encounter on District projects. The Qualified Biologists must have sufficient background experience to implement protocols, collect and organize ornithological data and be capable of making appropriate decisions in the field.

- biologists in the Ecological Services Unit or Capital Programs Services Division specializing or trained in wildlife resources and at the level of Biologist I or above;
- consulting biologists hired by the District to conduct migratory bird work.

## BIOLOGIST I

### *Knowledge of:*

Basic principles and practices of ecology, biology, botany, wetlands science, wildlife management and related natural resources management. Pertinent federal, state and local codes laws and regulations. Principles of business letter writing and basic report preparation.

### *Ability to:*

Perform scientific research, analysis and reporting. Learn to analyze and evaluate complex biological data and technical reports in order to make recommendations based on results and findings. Read and interpret maps, plans, specifications and contract documents. Learn specific quantitative techniques to evaluate resource functions and values. Learn computer programs and their biological resource applications. Learn monitoring techniques and data evaluation in order to develop and implement mitigation and monitoring programs. Learn to interpret and explain applicable environmental laws and regulations. Prepare clear and concise reports. Understand and carry out oral and written instruction. Maintain accurate notes and records. Communicate clearly and concisely, both orally and in writing. Establish and maintain effective working relationships with those contacted in the course of work.

### *Experience and Training Guidelines*

Any combination of experience and training that would likely provide the required knowledge and abilities is qualifying. A typical way to obtain the knowledge and abilities would be:

#### *Experience*

One year of experience performing biological, ecological or other related scientific research.

#### *Training*



Equivalent to a Bachelors degree from an accredited college or university with major course work in biological or natural sciences, ecology or a related field. Directly related experience may be substituted for the college requirement on the basis of one and one-half years of experience for one year of education to a maximum of four years.

### **Designated Individual**

Designated Individuals are non-biologists appointed by the District Biologist or Managing Biologist to carry out specific tasks in support of these guidelines. Designated Individuals may assist with collection of ornithological data or oversee compliance with these guidelines. Examples of individuals that may be Designated Individuals include field assistants or biologists in training helping to collect biological data; Construction Inspectors or Project Managers overseeing contract specifications; District field personnel. The naming of Designated Individuals and their specific responsibilities shall be in writing prior to conducting work. Designated individuals will receive necessary and specific training by the District Biologist, Managing Biologist or Qualified Biologist to carry out their designated tasks.

#### **Limitations**

Designated Individuals shall not be authorized to make ecological determinations. The designated individual is acting under the direction of the District Biologist, Managing Biologist or Qualified Biologist. The naming of Designated Individual can be revoked at any time.

### **Contractor Biologist**

Contractor Biologist is an individual hired by a District contractor to carry out the provisions of a District project. The Contractor Biologist must meet the minimum qualifications for District Biologist, Managing Biologist or Qualified Biologist depending on the nature of the project work they are required to perform. Contractor Biologist overseeing projects and developing survey protocols must meet the provisions of District or Managing Biologist. Contractor Biologist performing field surveys must meet the minimum qualifications for Qualified Biologist.

## **APPENDIX E**

### **Stormwater Best Management Practice Fact Sheets**



## Description and Purpose

Water conservation practices are activities that use water during the construction of a project in a manner that avoids causing erosion and the transport of pollutants offsite. These practices can reduce or eliminate non-stormwater discharges.

## Suitable Applications

Water conservation practices are suitable for all construction sites where water is used, including piped water, metered water, trucked water, and water from a reservoir.

## Limitations

- None identified.

## Implementation

- Keep water equipment in good working condition.
- Stabilize water truck filling area.
- Repair water leaks promptly.
- Washing of vehicles and equipment on the construction site is discouraged.
- Avoid using water to clean construction areas. If water must be used for cleaning or surface preparation, surface should be swept and vacuumed first to remove dirt. This will minimize amount of water required.

## Objectives

|    |  |                                     |
|----|--|-------------------------------------|
| EC | Erosion Control                                  | <input checked="" type="checkbox"/> |
| SE | Sediment Control                                 | <input checked="" type="checkbox"/> |
| TR | Tracking Control                                 |                                     |
| WE | Wind Erosion Control                             |                                     |
| NS | Non-Stormwater Management Control                | <input checked="" type="checkbox"/> |
| WM | Waste Management and Materials Pollution Control |                                     |

Legend:

- ☒ Primary Objective
- ☒ Secondary Objective

## Targeted Constituents

|                |                                     |
|----------------|-------------------------------------|
| Sediment       | <input checked="" type="checkbox"/> |
| Nutrients      |                                     |
| Trash          |                                     |
| Metals         |                                     |
| Bacteria       |                                     |
| Oil and Grease |                                     |
| Organics       |                                     |

## Potential Alternatives

None



- Direct construction water runoff to areas where it can soak into the ground or be collected and reused.
- Authorized non-stormwater discharges to the storm drain system, channels, or receiving waters are acceptable with the implementation of appropriate BMPs.
- Lock water tank valves to prevent unauthorized use.

**Costs**

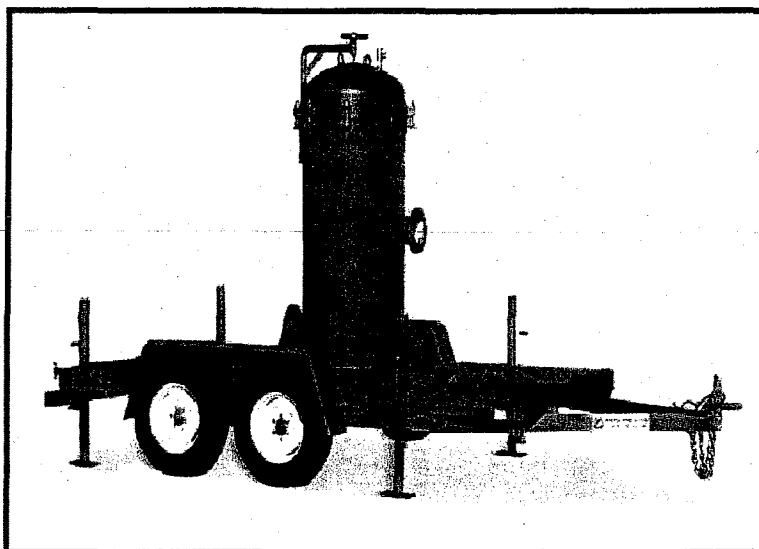
The cost is small to none compared to the benefits of conserving water.

**Inspection and Maintenance**

- Inspect and verify that activity based BMPs are in place prior to the commencement of authorized non-stormwater discharges.
- Inspect BMPs subject to non-stormwater discharges daily while non-stormwater discharges are occurring.
- Repair water equipment as needed to prevent unintended discharges.
  - Water trucks
  - Water reservoirs (water buffalos)
  - Irrigation systems
  - Hydrant connections

**References**

Stormwater Quality Handbooks - Construction Site Best Management Practices (BMPs) Manual, State of California Department of Transportation (Caltrans), November 2000.



## Description and Purpose

Dewatering operations are practices that manage the discharge of pollutants when non-stormwater and accumulated precipitation must be removed from a work location so that construction work may be accomplished.

## Suitable Applications

These practices are implemented for discharges of non-stormwater from construction sites. Non-stormwaters include, but are not limited to, groundwater, water from cofferdams, water diversions, and waters used during construction activities that must be removed from a work area.

Practices identified in this section are also appropriate for implementation when managing the removal of accumulated precipitation (stormwater) from depressed areas at a construction site.

## Limitations

- Site conditions will dictate design and use of dewatering operations.
- The controls discussed in this best management practice (BMP) address sediment only.
- The controls detailed in this BMP only allow for minimal settling time for sediment particles. Use only when site conditions restrict the use of the other control methods.
- Dewatering operations will require, and must comply with, applicable local permits.

## Objectives

|    |  |                                     |
|----|--|-------------------------------------|
| EC | Erosion Control                                  |                                     |
| SE | Sediment Control                                 | <input checked="" type="checkbox"/> |
| TR | Tracking Control                                 |                                     |
| WE | Wind Erosion Control                             |                                     |
| NS | Non-Stormwater Management Control                | <input checked="" type="checkbox"/> |
| WM | Waste Management and Materials Pollution Control |                                     |

## Legend:

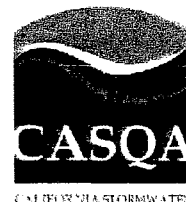
- ☒ Primary Objective
- ☐ Secondary Objective

## Targeted Constituents

|                |                                     |
|----------------|-------------------------------------|
| Sediment       | <input checked="" type="checkbox"/> |
| Nutrients      |                                     |
| Trash          |                                     |
| Metals         |                                     |
| Bacteria       |                                     |
| Oil and Grease | <input checked="" type="checkbox"/> |
| Organics       |                                     |

## Potential Alternatives

- SE-5: Fiber Roll
- SE-6: Gravel Bag Berm
- SE-9: Straw Bale Barrier



- Avoid dewatering discharges where possible by using the water for dust control, by infiltration, etc.

**Implementation**

- Dewatering non-stormwater cannot be discharged without prior notice to and approval from the Regional Water Quality Control Board (RWQCB) and local stormwater management agency. This includes stormwater that is co-mingled with groundwater or other non-stormwater sources. Once the discharge is allowed, appropriate BMPs must be implemented to ensure the discharge complies with all permit requirements and regional and watershed-specific requirements.
- RWQCB may require a separate NPDES permit prior to the dewatering discharge of non-stormwater. These permits will have specific testing, monitoring, and discharge requirements and can take significant time to obtain.
- The flow chart shown in Figure 1 should be utilized to guide dewatering operations.
- The owner will coordinate monitoring and permit compliance.
- Additional permits or permissions from other agencies may be required for dewatering cofferdams or diversions.
- Dewatering discharges must not cause erosion at the discharge point.

A variety of methods can be used to treat water during dewatering operations. Several devices are presented below and provide options to achieve sediment removal. The size of particles present in the sediment and Permit or receiving water limitations on sediment are key considerations for selecting sediment treatment option(s); in some cases, the use of multiple devices may be appropriate.

***Sediment Basin (see also SE-2)******Description:***

- A sediment basin is a temporary basin with a controlled release structure that is formed by excavation or construction of an embankment to detain sediment-laden runoff and allow sediment to settle out before discharging. Sediment basins are generally larger than Sediment Traps (SE-3).

***Appropriate Applications:***

- Effective for the removal of gravel, sand, silt, some metals that settle out with the sediment, and trash.

***Implementation:***

- Excavation and construction of related facilities is required.
- Temporary sediment basins must be fenced if safety is a concern.
- Outlet protection is required to prevent erosion at the outfall location.

## *Maintenance:*

- Maintenance is required for safety fencing, vegetation, embankment, inlet and outfall structures, as well as other features.
- Removal of sediment is required when the storage volume is reduced by one-half.

## ***Sediment Trap (See also SE-3)***

### *Description:*

- A sediment trap is a temporary basin formed by excavation and/or construction of an earthen embankment across a waterway or low drainage area to detain sediment-laden runoff and allow sediment to settle out before discharging. Sediment traps are generally smaller than Sediment Basins (SE-2).

### *Appropriate Applications:*

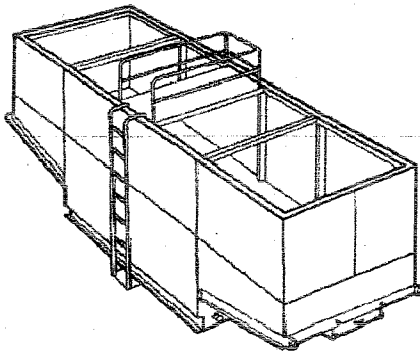
Effective for the removal of large and medium sized particles (sand and gravel) and some metals that settle out with the sediment.

### *Implementation:*

- Excavation and construction of related facilities is required.
- Trap inlets should be located to maximize the travel distance to the trap outlet.
- Use rock or vegetation to protect the trap outlets against erosion.

### *Maintenance:*

- Maintenance is required for vegetation, embankment, inlet and outfall structures, as well as other features.
- Removal of sediment is required when the storage volume is reduced by one-third.

**Weir Tanks****Description:**

- A weir tank separates water and waste by using weirs. The configuration of the weirs (over and under weirs) maximizes the residence time in the tank and determines the waste to be removed from the water, such as oil, grease, and sediments.

**Appropriate Applications:**

- The tank removes trash, some settleable solids (gravel, sand, and silt), some visible oil and grease, and some metals (removed with sediment). To achieve high levels of flow, multiple tanks can be used in parallel. If additional treatment is desired, the tanks can be placed in series or as pre-treatment for other methods.

**Implementation:**

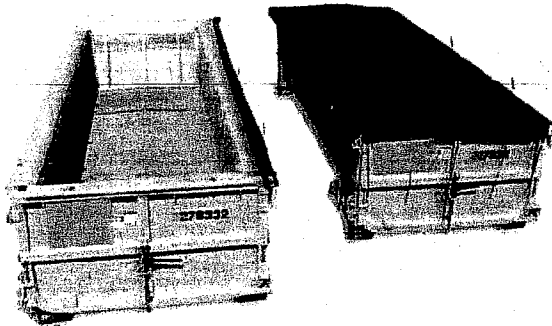
- Tanks are delivered to the site by the vendor, who can provide assistance with set-up and operation.
- Tank size will depend on flow volume, constituents of concern, and residency period required. Vendors should be consulted to appropriately size tank.

**Maintenance:**

- Periodic cleaning is required based on visual inspection or reduced flow.
- Oil and grease disposal must be by licensed waste disposal company.



## *Dewatering Tanks*



### *Description:*

- A dewatering tank removes debris and sediment. Flow enters the tank through the top, passes through a fabric filter, and is discharged through the bottom of the tank. The filter separates the solids from the liquids.

### *Appropriate Applications:*

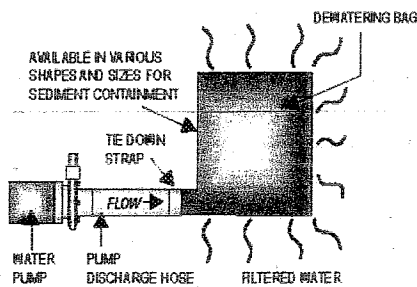
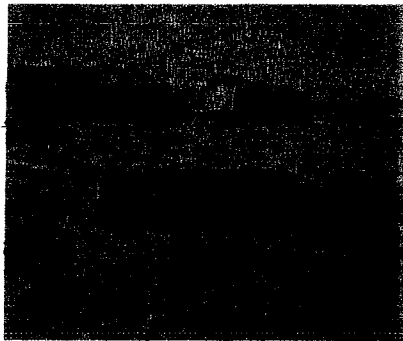
- The tank removes trash, gravel, sand, and silt, some visible oil and grease, and some metals (removed with sediment). To achieve high levels of flow, multiple tanks can be used in parallel. If additional treatment is desired, the tanks can be placed in series or as pre-treatment for other methods.

### *Implementation:*

- Tanks are delivered to the site by the vendor, who can provide assistance with set-up and operation.
- Tank size will depend on flow volume, constituents of concern, and residency period required. Vendors should be consulted to appropriately size tank.

### *Maintenance:*

- Periodic cleaning is required based on visual inspection or reduced flow.
- Oil and grease disposal must be by licensed waste disposal company.

**Gravity Bag Filter****Description:**

- A gravity bag filter, also referred to as a dewatering bag, is a square or rectangular bag made of non-woven geotextile fabric that collects sand, silt, and fines.

**Appropriate Applications:**

- Effective for the removal of sediments (gravel, sand, and silt). Some metals are removed with the sediment.

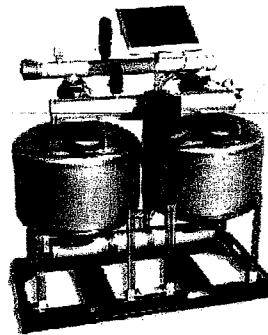
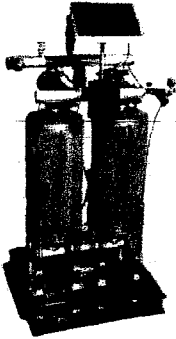
**Implementation:**

- Water is pumped into one side of the bag and seeps through the bottom and sides of the bag.
- A secondary barrier, such as a rock filter bed or straw/hay bale barrier, is placed beneath and beyond the edges of the bag to capture sediments that escape the bag.

**Maintenance:**

- Inspection of the flow conditions, bag condition, bag capacity, and the secondary barrier is required.
- Replace the bag when it no longer filters sediment or passes water at a reasonable rate.
- The bag is disposed of offsite.

## *Sand Media Particulate Filter*



### *Description:*

- Water is treated by passing it through canisters filled with sand media. Generally, sand filters provide a final level of treatment. They are often used as a secondary or higher level of treatment after a significant amount of sediment and other pollutants have been removed using other methods.

### *Appropriate Applications:*

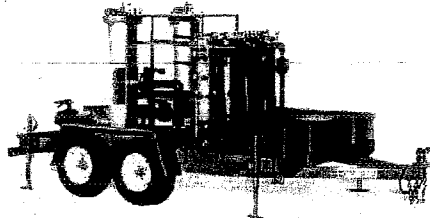
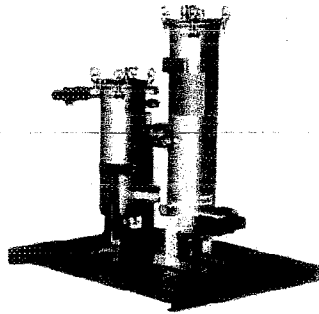
- Effective for the removal of trash, gravel, sand, and silt and some metals, as well as the reduction of biochemical oxygen demand (BOD) and turbidity.
- Sand filters can be used for stand-alone treatment or in conjunction with bag and cartridge filtration if further treatment is required.
- Sand filters can also be used to provide additional treatment to water treated via settling or basic filtration.

### *Implementation:*

- The filters require delivery to the site and initial set up. The vendor can provide assistance with installation and operation.

### *Maintenance:*

- The filters require regular service to monitor and maintain the level of the sand media. If subjected to high loading rates, filters can plug quickly.
- Vendors generally provide data on maximum head loss through the filter. The filter should be monitored daily while in use, and cleaned when head loss reaches target levels.
- If cleaned by backwashing, the backwash water may need to be hauled away for disposal, or returned to the upper end of the treatment train for another pass through the series of dewatering BMPs.

***Pressurized Bag Filter******Description:***

- A pressurized bag filter is a unit composed of single filter bags made from polyester felt material. The water filters through the unit and is discharged through a header. Vendors provide bag filters in a variety of configurations. Some units include a combination of bag filters and cartridge filters for enhanced contaminant removal.

***Appropriate Applications:***

- Effective for the removal of sediment (sand and silt) and some metals, as well as the reduction of BOD, turbidity, and hydrocarbons. Oil absorbent bags are available for hydrocarbon removal.
- Filters can be used to provide secondary treatment to water treated via settling or basic filtration.

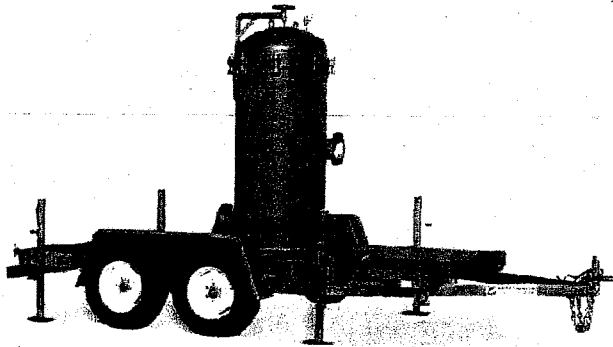
***Implementation:***

- The filters require delivery to the site and initial set up. The vendor can provide assistance with installation and operation.

***Maintenance:***

- The filter bags require replacement when the pressure differential equals or exceeds the manufacturer's recommendation.

## *Cartridge Filter*



### *Description:*

- Cartridge filters provide a high degree of pollutant removal by utilizing a number of individual cartridges as part of a larger filtering unit. They are often used as a secondary or higher (polishing) level of treatment after a significant amount of sediment and other pollutants are removed. Units come with various cartridge configurations (for use in series with bag filters) or with a larger single cartridge filtration unit (with multiple filters within).

### *Appropriate Applications:*

- Effective for the removal of sediment (sand, silt, and some clays) and metals, as well as the reduction of BOD, turbidity, and hydrocarbons. Hydrocarbons can effectively be removed with special resin cartridges.
- Filters can be used to provide secondary treatment to water treated via settling or basic filtration.

### *Implementation:*

- The filters require delivery to the site and initial set up. The vendor can provide assistance.

### *Maintenance:*

- The cartridges require replacement when the pressure differential equals or exceeds the manufacturer's recommendation.

### **Costs**

- Sediment controls are low to high cost measures depending on the dewatering system that is selected. Pressurized filters tend to be more expensive than gravity settling, but are often more effective. Simple tanks are generally rented on a long-term basis (one or more months) and can range from \$360 per month for a 1,000 gallon tank to \$2,660 per month for a 10,000 gallon tank. Mobilization and demobilization costs vary considerably.

### **Inspection and Maintenance**

- Inspect and verify that activity-based BMPs are in place prior to the commencement of associated activities. While activities associated with the BMP are under way, inspect weekly during the rainy season and at two-week intervals in the non-rainy season to verify continued BMP implementation.

- Inspect BMPs subject to non-stormwater discharges daily while non-stormwater discharges occur.
- Unit-specific maintenance requirements are included with the description of each unit.
- Sediment removed during the maintenance of a dewatering device may be either spread onsite and stabilized, or disposed of at a disposal site as approved by the owner.
- Sediment that is commingled with other pollutants must be disposed of in accordance with all applicable laws and regulations and as approved by the owner.

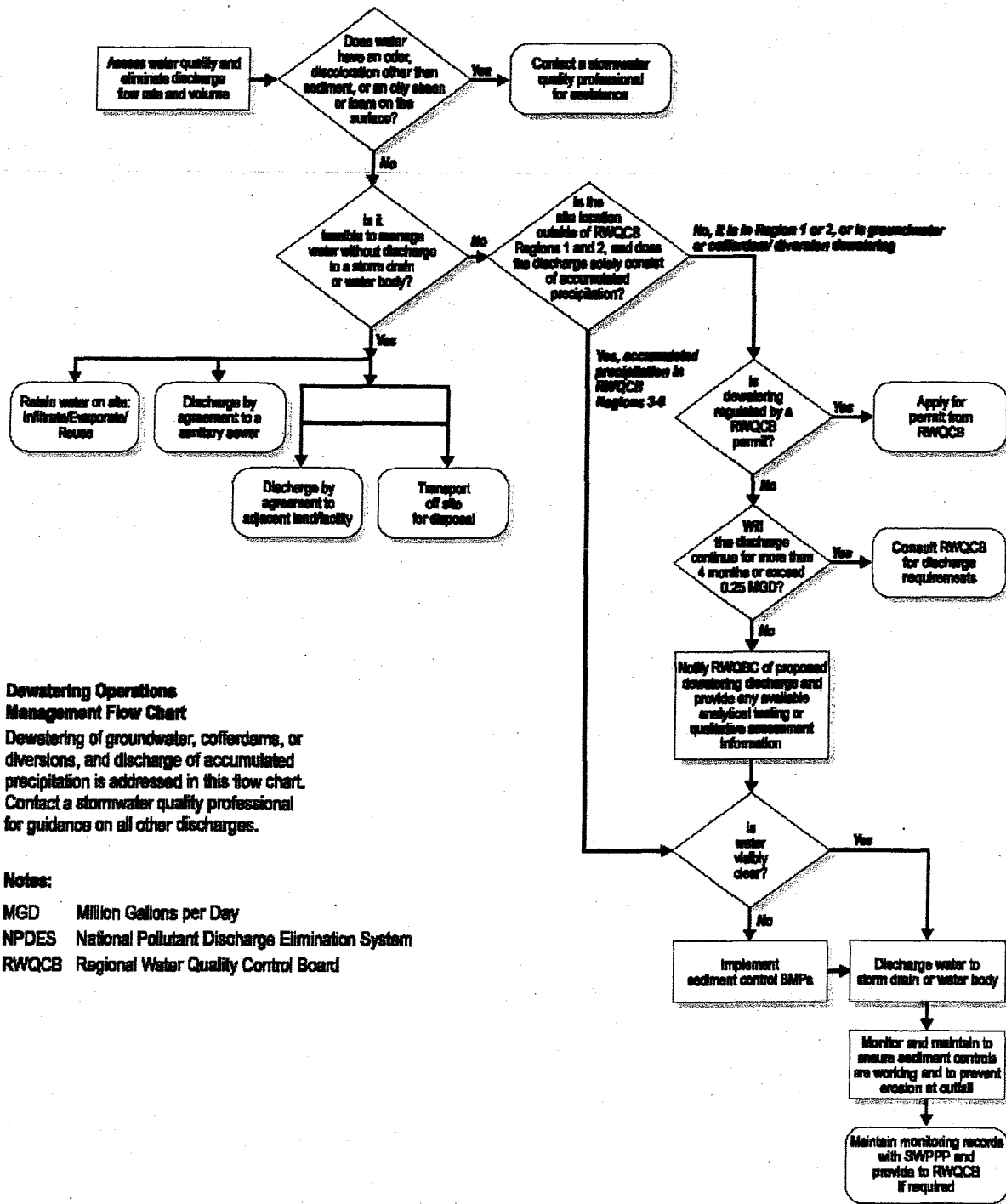
**References**

Blueprint for a Clean Bay: Best Management Practices to Prevent Stormwater Pollution from Construction Related Activities; Santa Clara Valley Nonpoint Source Pollution Control Program, 1995.

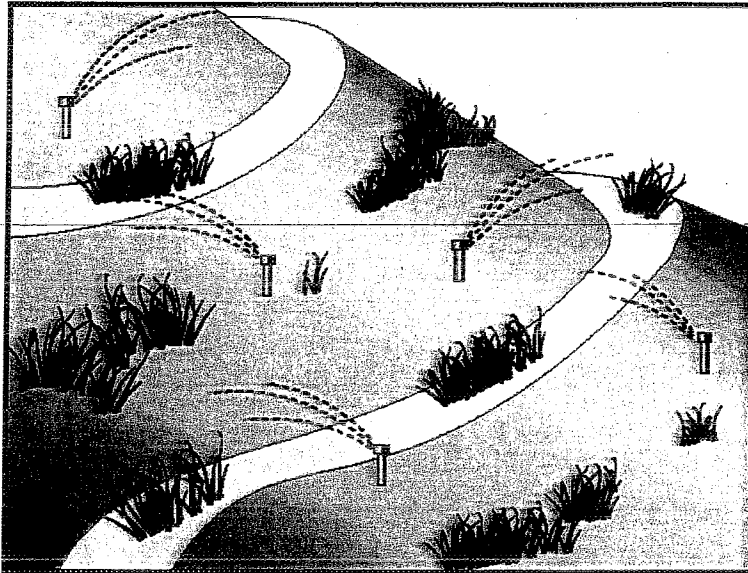
Stormwater Quality Handbooks - Construction Site Best Management Practices (BMPs) Manual, State of California Department of Transportation (Caltrans), November 2000.

Stormwater Management for Construction Activities, Developing Pollution Prevention Plans and Best Management Practices, EPA 832-R-92005; USEPA, April 1992.

Labor Surcharge & Equipment Rental Rates, April 1, 2002 through March 31, 2003, California Department of Transportation (Caltrans).



**Figure 1**  
**Operations Flow Chart**



## Description and Purpose

Potable Water/Irrigation consists of practices and procedures to manage the discharge of potential pollutants generated during discharges from irrigation water lines, landscape irrigation, lawn or garden watering, planned and unplanned discharges from potable water sources, water line flushing, and hydrant flushing.

## Suitable Applications

Implement this BMP whenever potable water or irrigation water discharges occur at or enter a construction site.

## Limitations

None identified.

## Implementation

- Direct water from offsite sources around or through a construction site, where feasible, in a way that minimizes contact with the construction site.
- Discharges from water line flushing should be reused for landscaping purposes where feasible.
- Shut off the water source to broken lines, sprinklers, or valves as soon as possible to prevent excess water flow.
- Protect downstream stormwater drainage systems and watercourses from water pumped or bailed from trenches excavated to repair water lines.

## Objectives

|    |  |                                     |
|----|--|-------------------------------------|
| EC | Erosion Control                                  |                                     |
| SE | Sediment Control                                 |                                     |
| TR | Tracking Control                                 |                                     |
| WE | Wind Erosion Control                             |                                     |
| NS | Non-Stormwater Management Control                | <input checked="" type="checkbox"/> |
| WM | Waste Management and Materials Pollution Control |                                     |

## Legend:

- ☒ Primary Objective
- ☐ Secondary Objective

## Targeted Constituents

|                |                                     |
|----------------|-------------------------------------|
| Sediment       | <input checked="" type="checkbox"/> |
| Nutrients      | <input checked="" type="checkbox"/> |
| Trash          |                                     |
| Metals         | <input checked="" type="checkbox"/> |
| Bacteria       |                                     |
| Oil and Grease |                                     |
| Organics       | <input checked="" type="checkbox"/> |

## Potential Alternatives

None





- Inspect irrigated areas within the construction limits for excess watering. Adjust watering times and schedules to ensure that the appropriate amount of water is being used and to minimize runoff. Consider factors such as soil structure, grade, time of year, and type of plant material in determining the proper amounts of water for a specific area.

**Costs**

Cost to manage potable water and irrigation are low and generally considered to be a normal part of related activities.

**Inspection and Maintenance**

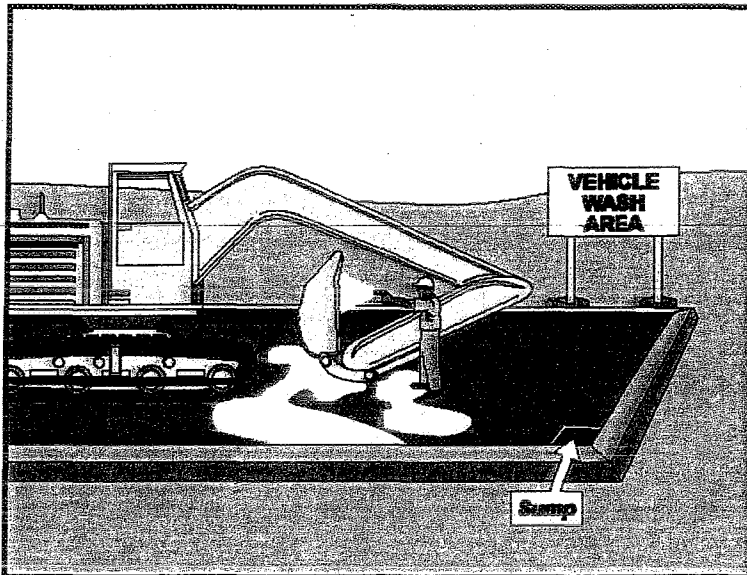
- Inspect and verify that activity-based BMPs are in place prior to the commencement of associated activities. While activities associated with the BMP are under way, inspect weekly during the rainy season and at two-week intervals in the non-rainy season to verify continued BMP implementation.
- Inspect BMPs subject to non-stormwater discharges daily while non-stormwater discharges occur.
- Repair broken water lines as soon as possible.
- Inspect irrigated areas regularly for signs of erosion and/or discharge.

**References**

Blueprint for a Clean Bay: Best Management Practices to Prevent Stormwater Pollution from Construction Related Activities; Santa Clara Valley Nonpoint Source Pollution Control Program, 1995.

Stormwater Quality Handbooks - Construction Site Best Management Practices (BMPs) Manual, State of California Department of Transportation (Caltrans), November 2000.

Stormwater Management for Construction Activities, Developing Pollution Prevention Plans and Best Management Practices, EPA 832-R-92005; USEPA, April 1992.



## Objectives

|    |  |                                     |
|----|--|-------------------------------------|
| EC | Erosion Control                                  |                                     |
| SE | Sediment Control                                 |                                     |
| TR | Tracking Control                                 |                                     |
| WE | Wind Erosion Control                             |                                     |
| NS | Non-Stormwater Management Control                | <input checked="" type="checkbox"/> |
| WM | Waste Management and Materials Pollution Control |                                     |

## Legend:

- ☒ Primary Objective
- ☐ Secondary Objective

## Description and Purpose

Vehicle and equipment cleaning procedures and practices eliminate or reduce the discharge of pollutants to stormwater from vehicle and equipment cleaning operations. Procedures and practices include but are not limited to: using offsite facilities; washing in designated, contained areas only; eliminating discharges to the storm drain by infiltrating the wash water; and training employees and subcontractors in proper cleaning procedures.

## Suitable Applications

These procedures are suitable on all construction sites where vehicle and equipment cleaning is performed.

## Limitations

Even phosphate-free, biodegradable soaps have been shown to be toxic to fish before the soap degrades. Sending vehicles/equipment offsite should be done in conjunction with TR-1, Stabilized Construction Entrance/Exit.

## Implementation

Other options to washing equipment onsite include contracting with either an offsite or mobile commercial washing business. These businesses may be better equipped to handle and dispose of the wash waters properly. Performing this work offsite can also be economical by eliminating the need for a separate washing operation onsite.

If washing operations are to take place onsite, then:

## Targeted Constituents

|                |                                     |
|----------------|-------------------------------------|
| Sediment       | <input checked="" type="checkbox"/> |
| Nutrients      | <input checked="" type="checkbox"/> |
| Trash          |                                     |
| Metals         |                                     |
| Bacteria       |                                     |
| Oil and Grease | <input checked="" type="checkbox"/> |
| Organics       | <input checked="" type="checkbox"/> |

## Potential Alternatives

None



CALIFORNIA STORMWATER  
CONSTRUCTION BEST MANAGEMENT PRACTICES

# **NS-8      Vehicle and Equipment Cleaning**

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- Use phosphate-free, biodegradable soaps.
- Educate employees and subcontractors on pollution prevention measures.
- Do not permit steam cleaning onsite. Steam cleaning can generate significant pollutant concentrates.
- Cleaning of vehicles and equipment with soap, solvents or steam should not occur on the project site unless resulting wastes are fully contained and disposed of. Resulting wastes should not be discharged or buried, and must be captured and recycled or disposed according to the requirements of WM-10, Liquid Waste Management or WM-6, Hazardous Waste Management, depending on the waste characteristics. Minimize use of solvents. Use of diesel for vehicle and equipment cleaning is prohibited.
- All vehicles and equipment that regularly enter and leave the construction site must be cleaned offsite.
- When vehicle and equipment washing and cleaning must occur onsite, and the operation cannot be located within a structure or building equipped with appropriate disposal facilities, the outside cleaning area should have the following characteristics:
  - Located away from storm drain inlets, drainage facilities, or watercourses
  - Paved with concrete or asphalt and bermed to contain wash waters and to prevent runoff and runoff
  - Configured with a sump to allow collection and disposal of wash water
  - No discharge of wash waters to storm drains or watercourses
  - Used only when necessary
- When cleaning vehicles and equipment with water:
  - Use as little water as possible. High-pressure sprayers may use less water than a hose and should be considered
  - Use positive shutoff valve to minimize water usage
  - Facility wash racks should discharge to a sanitary sewer, recycle system or other approved discharge system and must not discharge to the storm drainage system, watercourses, or to groundwater

## **Costs**

Cleaning vehicles and equipment at an offsite facility may reduce overall costs for vehicle and equipment cleaning by eliminating the need to provide similar services onsite. When onsite cleaning is needed, the cost to establish appropriate facilities is relatively low on larger, long-duration projects, and moderate to high on small, short-duration projects.

## Inspection and Maintenance

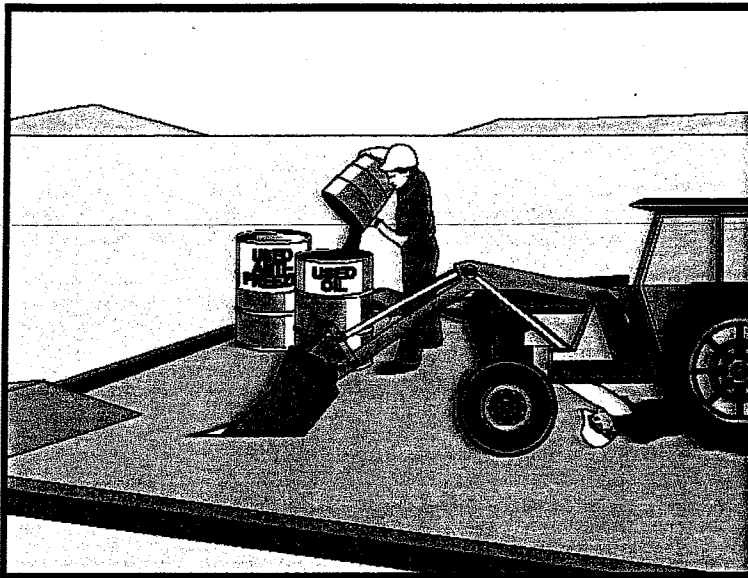
- Inspect and verify that activity-based BMPs are in place prior to the commencement of associated activities. While activities associated with the BMP are under way, inspect weekly during the rainy season and at two-week intervals in the non-rainy season to verify continued BMP implementation.
- Inspect BMPs subject to non-stormwater discharges daily while non-stormwater discharges occur.
- Inspection and maintenance is minimal, although some berm repair may be necessary.
- Monitor employees and subcontractors throughout the duration of the construction project to ensure appropriate practices are being implemented.
- Inspect sump regularly and remove liquids and sediment as needed.
- Prohibit employees and subcontractors from washing personal vehicles and equipment on the construction site.

## References

Stormwater Quality Handbooks - Construction Site Best Management Practices (BMPs) Manual, State of California Department of Transportation (Caltrans), November 2000.

Swisher, R.D. Surfactant Biodegradation, Marcel Decker Corporation, 1987.

# Vehicle & Equipment Maintenance NS-10



## Description and Purpose

Prevent or reduce the contamination of stormwater resulting from vehicle and equipment maintenance by running a "dry and clean site". The best option would be to perform maintenance activities at an offsite facility. If this option is not available then work should be performed in designated areas only, while providing cover for materials stored outside, checking for leaks and spills, and containing and cleaning up spills immediately. Employees and subcontractors must be trained in proper procedures.

## Suitable Applications

These procedures are suitable on all construction projects where an onsite yard area is necessary for storage and maintenance of heavy equipment and vehicles.

## Limitations

Onsite vehicle and equipment maintenance should only be used where it is impractical to send vehicles and equipment offsite for maintenance and repair. Sending vehicles/equipment offsite should be done in conjunction with TR-1, Stabilized Construction Entrance/Exit.

Outdoor vehicle or equipment maintenance is a potentially significant source of stormwater pollution. Activities that can contaminate stormwater include engine repair and service, changing or replacement of fluids, and outdoor equipment storage and parking (engine fluid leaks). For further information on vehicle or equipment servicing, see NS-8, Vehicle and Equipment Cleaning, and NS-9, Vehicle and Equipment Fueling.

## Objectives

|    |  |                                     |
|----|--|-------------------------------------|
| EC | Erosion Control                                  |                                     |
| SE | Sediment Control                                 |                                     |
| TR | Tracking Control                                 |                                     |
| WE | Wind Erosion Control                             |                                     |
| NS | Non-Stormwater Management Control                | <input checked="" type="checkbox"/> |
| WM | Waste Management and Materials Pollution Control |                                     |

## Legend:

- ☒ Primary Objective
- ☒ Secondary Objective

## Targeted Constituents

|                |                                     |
|----------------|-------------------------------------|
| Sediment       |                                     |
| Nutrients      | <input checked="" type="checkbox"/> |
| Trash          | <input checked="" type="checkbox"/> |
| Metals         |                                     |
| Bacteria       |                                     |
| Oil and Grease | <input checked="" type="checkbox"/> |
| Organics       | <input checked="" type="checkbox"/> |

## Potential Alternatives

None



# **NS-10 Vehicle & Equipment Maintenance**

## **Implementation**

- Use offsite repair shops as much as possible. These businesses are better equipped to handle vehicle fluids and spills properly. Performing this work offsite can also be economical by eliminating the need for a separate maintenance area.
- If maintenance must occur onsite, use designated areas, located away from drainage courses. Dedicated maintenance areas should be protected from stormwater runoff and runoff, and should be located at least 50 ft from downstream drainage facilities and watercourses.
- Drip pans or absorbent pads should be used during vehicle and equipment maintenance work that involves fluids, unless the maintenance work is performed over an impermeable surface in a dedicated maintenance area.
- Place a stockpile of spill cleanup materials where it will be readily accessible.
- All fueling trucks and fueling areas are required to have spill kits and/or use other spill protection devices.
- Use adsorbent materials on small spills. Remove the absorbent materials promptly and dispose of properly.
- Inspect onsite vehicles and equipment daily at startup for leaks, and repair immediately.
- Keep vehicles and equipment clean; do not allow excessive build-up of oil and grease.
- Segregate and recycle wastes, such as greases, used oil or oil filters, antifreeze, cleaning solutions, automotive batteries, hydraulic and transmission fluids. Provide secondary containment and covers for these materials if stored onsite.
- Train employees and subcontractors in proper maintenance and spill cleanup procedures.
- Drip pans or plastic sheeting should be placed under all vehicles and equipment placed on docks, barges, or other structures over water bodies when the vehicle or equipment is planned to be idle for more than 1 hour.
- For long-term projects, consider using portable tents or covers over maintenance areas if maintenance cannot be performed offsite.
- Consider use of new, alternative greases and lubricants, such as adhesive greases, for chassis lubrication and fifth-wheel lubrication.
- Properly dispose of used oils, fluids, lubricants, and spill cleanup materials.
- Do not place used oil in a dumpster or pour into a storm drain or watercourse.
- Properly dispose of or recycle used batteries.
- Do not bury used tires.
- Repair leaks of fluids and oil immediately.

# Vehicle & Equipment Maintenance NS-10

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Listed below is further information if you must perform vehicle or equipment maintenance onsite.

## ***Safer Alternative Products***

- Consider products that are less toxic or hazardous than regular products. These products are often sold under an "environmentally friendly" label.
- Consider use of grease substitutes for lubrication of truck fifth-wheels. Follow manufacturers label for details on specific uses.
- Consider use of plastic friction plates on truck fifth-wheels in lieu of grease. Follow manufacturers label for details on specific uses.

## ***Waste Reduction***

Parts are often cleaned using solvents such as trichloroethylene, trichloroethane, or methylene chloride. Many of these cleaners are listed in California Toxic Rule as priority pollutants. These materials are harmful and must not contaminate stormwater. They must be disposed of as a hazardous waste. Reducing the number of solvents makes recycling easier and reduces hazardous waste management costs. Often, one solvent can perform a job as well as two different solvents. Also, if possible, eliminate or reduce the amount of hazardous materials and waste by substituting non-hazardous or less hazardous materials. For example, replace chlorinated organic solvents with non-chlorinated solvents. Non-chlorinated solvents like kerosene or mineral spirits are less toxic and less expensive to dispose of properly. Check the list of active ingredients to see whether it contains chlorinated solvents. The "chlor" term indicates that the solvent is chlorinated. Also, try substituting a wire brush for solvents to clean parts.

## ***Recycling and Disposal***

Separating wastes allows for easier recycling and may reduce disposal costs. Keep hazardous wastes separate, do not mix used oil solvents, and keep chlorinated solvents (like, -trichloroethane) separate from non-chlorinated solvents (like kerosene and mineral spirits). Promptly transfer used fluids to the proper waste or recycling drums. Don't leave full drip pans or other open containers lying around. Provide cover and secondary containment until these materials can be removed from the site.

Oil filters can be recycled. Ask your oil supplier or recycler about recycling oil filters.

Do not dispose of extra paints and coatings by dumping liquid onto the ground or throwing it into dumpsters. Allow coatings to dry or harden before disposal into covered dumpsters.

Store cracked batteries in a non-leaking secondary container. Do this with all cracked batteries, even if you think all the acid has drained out. If you drop a battery, treat it as if it is cracked. Put it into the containment area until you are sure it is not leaking.

## ***Costs***

All of the above are low cost measures. Higher costs are incurred to setup and maintain onsite maintenance areas.

# **NS-10 Vehicle & Equipment Maintenance**

## **Inspection and Maintenance**

- Inspect and verify that activity-based BMPs are in place prior to the commencement of associated activities. While activities associated with the BMP are under way, inspect weekly during the rainy season and at two-week intervals in the non-rainy season to verify continued BMP implementation.
- Inspect BMPs subject to non-stormwater discharges daily while non-stormwater discharges occur.
- Keep ample supplies of spill cleanup materials onsite.
- Maintain waste fluid containers in leak proof condition.
- Vehicles and equipment should be inspected on each day of use. Leaks should be repaired immediately or the problem vehicle(s) or equipment should be removed from the project site.
- Inspect equipment for damaged hoses and leaky gaskets routinely. Repair or replace as needed.

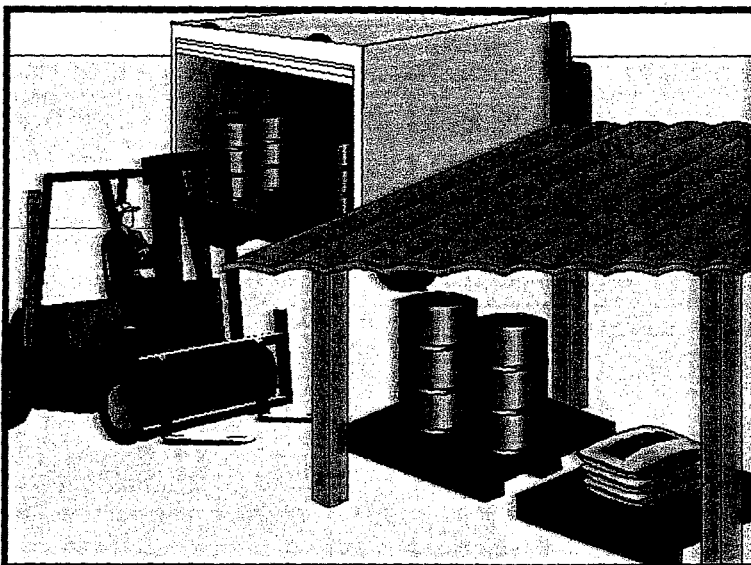
## **References**

Blueprint for a Clean Bay: Best Management Practices to Prevent Stormwater Pollution from Construction Related Activities; Santa Clara Valley Nonpoint Source Pollution Control Program, 1995.

Coastal Nonpoint Pollution Control Program; Program Development and Approval Guidance, Working Group, Working Paper, USEPA, April 1992.

Stormwater Quality Handbooks - Construction Site Best Management Practices (BMPs) Manual, State of California Department of Transportation (Caltrans), November 2000.





## Objectives

|    |  |                                     |
|----|--|-------------------------------------|
| EC | Erosion Control                                  |                                     |
| SE | Sediment Control                                 |                                     |
| TC | Tracking Control                                 |                                     |
| WE | Wind Erosion Control                             |                                     |
| NS | Non-Stormwater Management Control                |                                     |
| WM | Waste Management and Materials Pollution Control | <input checked="" type="checkbox"/> |

## Legend:

- ☒ Primary Objective
- ☒ Secondary Objective

## Description and Purpose

Prevent, reduce, or eliminate the discharge of pollutants from material delivery and storage to the stormwater system or watercourses by minimizing the storage of hazardous materials onsite, storing materials in a designated area, installing secondary containment, conducting regular inspections, and training employees and subcontractors.

This best management practice covers only material delivery and storage. For other information on materials, see WM-2, Material Use, or WM-4, Spill Prevention and Control. For information on wastes, see the waste management BMPs in this section.

## Suitable Applications

These procedures are suitable for use at all construction sites with delivery and storage of the following materials:

- Soil stabilizers and binders
- Pesticides and herbicides
- Fertilizers
- Detergents
- Plaster
- Petroleum products such as fuel, oil, and grease
- Asphalt and concrete components

## Targeted Constituents

|                |                                     |
|----------------|-------------------------------------|
| Sediment       | <input checked="" type="checkbox"/> |
| Nutrients      | <input checked="" type="checkbox"/> |
| Trash          | <input checked="" type="checkbox"/> |
| Metals         | <input checked="" type="checkbox"/> |
| Bacteria       |                                     |
| Oil and Grease | <input checked="" type="checkbox"/> |
| Organics       | <input checked="" type="checkbox"/> |

## Potential Alternatives

None



- Hazardous chemicals such as acids, lime, glues, adhesives, paints, solvents, and curing compounds
- Concrete compounds
- Other materials that may be detrimental if released to the environment

**Limitations**

- Space limitation may preclude indoor storage.
- Storage sheds often must meet building and fire code requirements.

**Implementation**

The following steps should be taken to minimize risk:

- Temporary storage area should be located away from vehicular traffic.
- Material Safety Data Sheets (MSDS) should be supplied for all materials stored.
- Construction site areas should be designated for material delivery and storage.
- Material delivery and storage areas should be located near the construction entrances, away from waterways, if possible.
  - Avoid transport near drainage paths or waterways.
  - Surround with earth berms. See EC-9, Earth Dikes and Drainage Swales.
  - Place in an area which will be paved.
- Storage of reactive, ignitable, or flammable liquids must comply with the fire codes of your area. Contact the local Fire Marshal to review site materials, quantities, and proposed storage area to determine specific requirements. See the Flammable and Combustible Liquid Code, NFPA30.
- An up to date inventory of materials delivered and stored onsite should be kept.
- Hazardous materials storage onsite should be minimized.
- Hazardous materials should be handled as infrequently as possible.
- During the rainy season, consider storing materials in a covered area. Store materials in secondary containments such as earthen dike, horse trough, or even a children's wading pool for non-reactive materials such as detergents, oil, grease, and paints. Small amounts of material may be secondarily contained in "bus boy" trays or concrete mixing trays.
- Do not store chemicals, drums, or bagged materials directly on the ground. Place these items on a pallet and, when possible, in secondary containment.

- If drums must be kept uncovered, store them at a slight angle to reduce ponding of rainwater on the lids to reduce corrosion. Domed plastic covers are inexpensive and snap to the top of drums, preventing water from collecting.
- Chemicals should be kept in their original labeled containers.
- Employees and subcontractors should be trained on the proper material delivery and storage practices.
- Employees trained in emergency spill cleanup procedures must be present when dangerous materials or liquid chemicals are unloaded.
- If significant residual materials remain on the ground after construction is complete, properly remove materials and any contaminated soil. See WM-7, Contaminated Soil Management. If the area is to be paved, pave as soon as materials are removed to stabilize the soil.

## ***Material Storage Areas and Practices***

- Liquids, petroleum products, and substances listed in 40 CFR Parts 110, 117, or 302 should be stored in approved containers and drums and should not be overfilled. Containers and drums should be placed in temporary containment facilities for storage.
- A temporary containment facility should provide for a spill containment volume able to contain precipitation from a 25 year storm event, plus the greater of 10% of the aggregate volume of all containers or 100% of the capacity of the largest container within its boundary, whichever is greater.
- A temporary containment facility should be impervious to the materials stored therein for a minimum contact time of 72 hours.
- A temporary containment facility should be maintained free of accumulated rainwater and spills. In the event of spills or leaks, accumulated rainwater and spills should be collected and placed into drums. These liquids should be handled as a hazardous waste unless testing determines them to be non-hazardous. All collected liquids or non-hazardous liquids should be sent to an approved disposal site.
- Sufficient separation should be provided between stored containers to allow for spill cleanup and emergency response access.
- Incompatible materials, such as chlorine and ammonia, should not be stored in the same temporary containment facility.
- Throughout the rainy season, each temporary containment facility should be covered during non-working days, prior to, and during rain events.
- Materials should be stored in their original containers and the original product labels should be maintained in place in a legible condition. Damaged or otherwise illegible labels should be replaced immediately.

- Bagged and boxed materials should be stored on pallets and should not be allowed to accumulate on the ground. To provide protection from wind and rain throughout the rainy season, bagged and boxed materials should be covered during non-working days and prior to and during rain events.
- Stockpiles should be protected in accordance with WM-3, Stockpile Management.
- Materials should be stored indoors within existing structures or sheds when available.
- Proper storage instructions should be posted at all times in an open and conspicuous location.
- An ample supply of appropriate spill clean up material should be kept near storage areas.
- Also see WM-6, Hazardous Waste Management, for storing of hazardous materials.

***Material Delivery Practices***

- Keep an accurate, up-to-date inventory of material delivered and stored onsite.
- Arrange for employees trained in emergency spill cleanup procedures to be present when dangerous materials or liquid chemicals are unloaded.

***Spill Cleanup***

- Contain and clean up any spill immediately.
- Properly remove and dispose of any hazardous materials or contaminated soil if significant residual materials remain on the ground after construction is complete. See WM-7, Contaminated Soil Management.
- See WM-4, Spill Prevention and Control, for spills of chemicals and/or hazardous materials.

***Cost***

- The largest cost of implementation may be in the construction of a materials storage area that is covered and provides secondary containment.

***Inspection and Maintenance***

- Inspect and verify that activity-based BMPs are in place prior to the commencement of associated activities. While activities associated with the BMP are under way, inspect weekly during the rainy season and of two-week intervals in the non-rainy season to verify continued BMP implementation.
- Keep an ample supply of spill cleanup materials near the storage area.
- Keep storage areas clean, well organized, and equipped with ample cleanup supplies as appropriate for the materials being stored.
- Repair or replace perimeter controls, containment structures, covers, and liners as needed to maintain proper function.

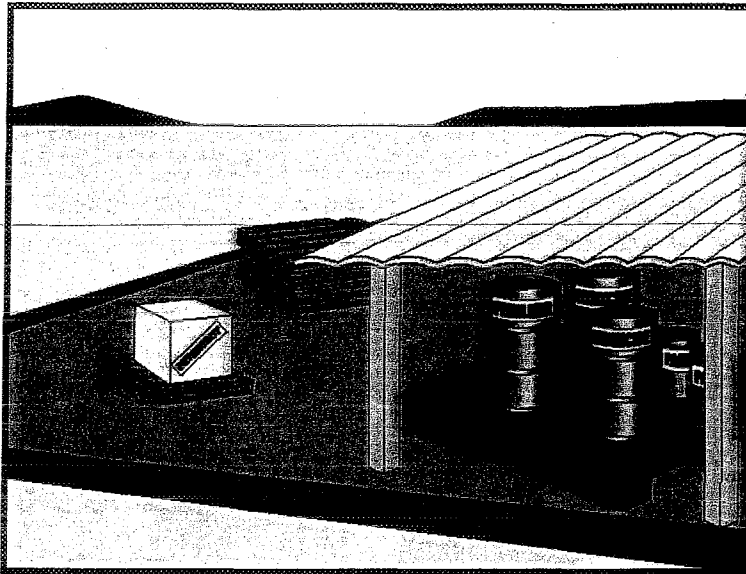
## **References**

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Coastal Nonpoint Pollution Control Program: Program Development and Approval Guidance, Working Group Working Paper; USEPA, April 1992.

Stormwater Quality Handbooks - Construction Site Best Management Practices (BMPs) Manual, State of California Department of Transportation (Caltrans), November 2000.

Stormwater Management for Construction Activities; Developing Pollution Prevention Plans and Best Management Practice, EPA 832-R-92005; USEPA, April 1992.



## Description and Purpose

Prevent or reduce the discharge of pollutants to the storm drain system or watercourses from material use by using alternative products, minimizing hazardous material use onsite, and training employees and subcontractors.

## Suitable Applications

This BMP is suitable for use at all construction projects. These procedures apply when the following materials are used or prepared onsite:

- Pesticides and herbicides
- Fertilizers
- Detergents
- Plaster
- Petroleum products such as fuel, oil, and grease
- Asphalt and other concrete components
- Other hazardous chemicals such as acids, lime, glues, adhesives, paints, solvents, and curing compounds
- Concrete compounds
- Other materials that may be detrimental if released to the environment

## Objectives

|    |  |                                     |
|----|--|-------------------------------------|
| EC | Erosion Control                                  |                                     |
| SE | Sediment Control                                 |                                     |
| TC | Tracking Control                                 |                                     |
| WE | Wind Erosion Control                             |                                     |
| NS | Non-Stormwater Management Control                |                                     |
| WM | Waste Management and Materials Pollution Control | <input checked="" type="checkbox"/> |

## Legend:

- ☒ Primary Objective
- ☒ Secondary Objective

## Targeted Constituents

|                |                                     |
|----------------|-------------------------------------|
| Sediment       | <input checked="" type="checkbox"/> |
| Nutrients      | <input checked="" type="checkbox"/> |
| Trash          | <input checked="" type="checkbox"/> |
| Metals         | <input checked="" type="checkbox"/> |
| Bacteria       |                                     |
| Oil and Grease | <input checked="" type="checkbox"/> |
| Organics       | <input checked="" type="checkbox"/> |

## Potential Alternatives

None



**Limitations**

Safer alternative building and construction products may not be available or suitable in every instance.

**Implementation**

The following steps should be taken to minimize risk:

- Minimize use of hazardous materials onsite.
- Follow manufacturer instructions regarding uses, protective equipment, ventilation, flammability, and mixing of chemicals.
- Train personnel who use pesticides. The California Department of Pesticide Regulation and county agricultural commissioners license pesticide dealers, certify pesticide applicators, and conduct onsite inspections.
- Do not over-apply fertilizers, herbicides, and pesticides. Prepare only the amount needed. Follow the recommended usage instructions. Over-application is expensive and environmentally harmful. Unless on steep slopes, till fertilizers into the soil rather than hydro seeding. Apply surface dressings in several smaller applications, as opposed to one large application, to allow time for infiltration and to avoid excess material being carried offsite by runoff. Do not apply these chemicals just before it rains.
- Train employees and subcontractors in proper material use.
- Supply Material Safety Data Sheets (MSDS) for all materials.
- Dispose of latex paint and paint cans, used brushes, rags, absorbent materials, and drop cloths, when thoroughly dry and are no longer hazardous, with other construction debris.
- Do not remove the original product label; it contains important safety and disposal information. Use the entire product before disposing of the container.
- Mix paint indoors or in a containment area. Never clean paintbrushes or rinse paint containers into a street, gutter, storm drain, or watercourse. Dispose of any paint thinners, residue, and sludge(s) that cannot be recycled, as hazardous waste.
- For water-based paint, clean brushes to the extent practicable, and rinse to a drain leading to a sanitary sewer where permitted, or into a concrete washout pit or temporary sediment trap. For oil-based paints, clean brushes to the extent practicable, and filter and reuse thinners and solvents.
- Use recycled and less hazardous products when practical. Recycle residual paints, solvents, non-treated lumber, and other materials.
- Use materials only where and when needed to complete the construction activity. Use safer alternative materials as much as possible. Reduce or eliminate use of hazardous materials onsite when practical.

- Require contractors to complete the "Report of Chemical Spray Forms" when spraying herbicides and pesticides.
- Keep an ample supply of spill clean up material near use areas. Train employees in spill clean up procedures.
- Avoid exposing applied materials to rainfall and runoff unless sufficient time has been allowed for them to dry.

## Costs

All of the above are low cost measures.

## Inspection and Maintenance

- Inspect and verify that activity-based BMPs are in place prior to the commencement of associated activities. While activities associated with the BMP are under way, inspect weekly during the rainy season and at two-week intervals in the non-rainy season to verify continued BMP implementation.
- Maintenance of this best management practice is minimal.
- Spot check employees and subcontractors throughout the job to ensure appropriate practices are being employed.

## References

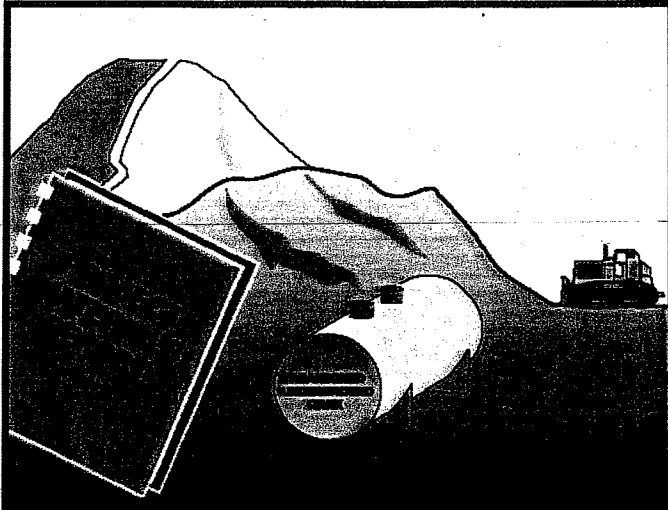
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## Objectives

|    |  |                                     |
|----|--|-------------------------------------|
| EC | Erosion Control                                  |                                     |
| SE | Sediment Control                                 |                                     |
| TC | Tracking Control                                 |                                     |
| WE | Wind Erosion Control                             |                                     |
| NS | Non-Stormwater Management Control                |                                     |
| WM | Waste Management and Materials Pollution Control | <input checked="" type="checkbox"/> |

## Legend:

- ☒ Primary Objective
- ☒ Secondary Objective

## Description and Purpose

Prevent or reduce the discharge of pollutants to stormwater from contaminated soil and highly acidic or alkaline soils by conducting pre-construction surveys, inspecting excavations regularly, and remediating contaminated soil promptly.

## Suitable Applications

Contaminated soil management is implemented on construction projects in highly urbanized or industrial areas where soil contamination may have occurred due to spills, illicit discharges, aerial deposition, past use and leaks from underground storage tanks.

## Limitations

Contaminated soils that cannot be treated onsite must be disposed of offsite by a licensed hazardous waste hauler. The presence of contaminated soil may indicate contaminated water as well. See NS-2, Dewatering Operations, for more information.

The procedures and practices presented in this BMP are general. The contractor should identify appropriate practices and procedures for the specific contaminants known to exist or discovered onsite.

## Implementation

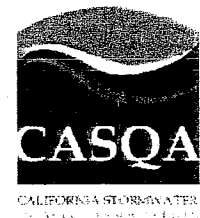
Most owners and developers conduct pre-construction environmental assessments as a matter of routine. Contaminated soils are often identified during project planning and development with known locations identified in the plans, specifications and in the SWPPP. The contractor should review applicable reports and investigate appropriate call-outs in the plans, specifications, and

## Targeted Constituents

|                |                                     |
|----------------|-------------------------------------|
| Sediment       |                                     |
| Nutrients      | <input checked="" type="checkbox"/> |
| Trash          | <input checked="" type="checkbox"/> |
| Metals         | <input checked="" type="checkbox"/> |
| Bacteria       | <input checked="" type="checkbox"/> |
| Oil and Grease | <input checked="" type="checkbox"/> |
| Organics       | <input checked="" type="checkbox"/> |

## Potential Alternatives

None



SWPPP. Recent court rulings holding contractors liable for cleanup costs when they unknowingly move contaminated soil highlight the need for contractors to confirm a site assessment is completed before earth moving begins.

The following steps will help reduce stormwater pollution from contaminated soil:

- Conduct thorough, pre-construction inspections of the site and review documents related to the site. If inspection or reviews indicated presence of contaminated soils, develop a plan before starting work.
- Look for contaminated soil as evidenced by discoloration, odors, differences in soil properties, abandoned underground tanks or pipes, or buried debris.
- Prevent leaks and spills. Contaminated soil can be expensive to treat and dispose of properly. However, addressing the problem before construction is much less expensive than after the structures are in place.
- The contractor may further identify contaminated soils by investigating:
  - Past site uses and activities
  - Detected or undetected spills and leaks
  - Acid or alkaline solutions from exposed soil or rock formations high in acid or alkaline forming elements
  - Contaminated soil as evidenced by discoloration, odors, differences in soil properties, abandoned underground tanks or pipes, or buried debris.
  - Suspected soils should be tested at a certified laboratory.

## ***Education***

- Have employees and subcontractors complete a safety training program which meets 29 CFR 1910.120 and 8 CCR 5192 covering the potential hazards as identified, prior to performing any excavation work at the locations containing material classified as hazardous.
- Educate employees and subcontractors in identification of contaminated soil and on contaminated soil handling and disposal procedures.
- Hold regular meetings to discuss and reinforce disposal procedures (incorporate into regular safety meetings).

## ***Handling Procedures for Material with Aerially Deposited Lead (ADL)***

- Materials from areas designated as containing (ADL) may, if allowed by the contract special provisions, be excavated, transported, and used in the construction of embankments and/or backfill.
- Excavation, transportation, and placement operations should result in no visible dust.
- Caution should be exercised to prevent spillage of lead containing material during transport.

- Quality should be monitored during excavation of soils contaminated with lead.

## ***Handling Procedures for Contaminated Soils***

- Minimize onsite storage. Contaminated soil should be disposed of properly in accordance with all applicable regulations. All hazardous waste storage will comply with the requirements in Title 22, CCR, Sections 66265.250 to 66265.260.
- Test suspected soils at an approved certified laboratory.
- Work with the local regulatory agencies to develop options for treatment or disposal if the soil is contaminated.
- Avoid temporary stockpiling of contaminated soils or hazardous material.
- Take the following precautions if temporary stockpiling is necessary:
  - Cover the stockpile with plastic sheeting or tarps.
  - Install a berm around the stockpile to prevent runoff from leaving the area.
  - Do not stockpile in or near storm drains or watercourses.
- Remove contaminated material and hazardous material on exteriors of transport vehicles and place either into the current transport vehicle or into the excavation prior to the vehicle leaving the exclusion zone.
- Monitor the air quality continuously during excavation operations at all locations containing hazardous material.
- Procure all permits and licenses, pay all charges and fees, and give all notices necessary and incident to the due and lawful prosecution of the work, including registration for transporting vehicles carrying the contaminated material and the hazardous material.
- Collect water from decontamination procedures and treat or dispose of it at an appropriate disposal site.
- Collect non-reusable protective equipment, once used by any personnel, and dispose of at an appropriate disposal site.
- Install temporary security fence to surround and secure the exclusion zone. Remove fencing when no longer needed.
- Excavate, transport, and dispose of contaminated material and hazardous material in accordance with the rules and regulations of the following agencies (the specifications of these agencies supersede the procedures outlined in this BMP):
  - United States Department of Transportation (USDOT)
  - United States Environmental Protection Agency (USEPA)
  - California Environmental Protection Agency (CAL-EPA)

- California Division of Occupation Safety and Health Administration (CAL-OSHA)
- Local regulatory agencies

## ***Procedures for Underground Storage Tank Removals***

- Prior to commencing tank removal operations, obtain the required underground storage tank removal permits and approval from the federal, state, and local agencies that have jurisdiction over such work.
- To determine if it contains hazardous substances, arrange to have tested, any liquid or sludge found in the underground tank prior to its removal.
- Following the tank removal, take soil samples beneath the excavated tank and perform analysis as required by the local agency representative(s).
- The underground storage tank, any liquid or sludge found within the tank, and all contaminated substances and hazardous substances removed during the tank removal and transported to disposal facilities permitted to accept such waste.

## ***Water Control***

- All necessary precautions and preventive measures should be taken to prevent the flow of water, including ground water, from mixing with hazardous substances or underground storage tank excavations. Such preventative measures may consist of, but are not limited to, berms, cofferdams, grout curtains, freeze walls, and seal course concrete or any combination thereof.
- If water does enter an excavation and becomes contaminated, such water, when necessary to proceed with the work, should be discharged to clean, closed top, watertight transportable holding tanks, treated, and disposed of in accordance with federal, state, and local laws.

## ***Costs***

Prevention of leaks and spills is inexpensive. Treatment or disposal of contaminated soil can be quite expensive.

## ***Inspection and Maintenance***

- Inspect and verify that activity-based BMPs are in place prior to the commencement of associated activities. While activities associated with the BMP are under way, inspect weekly during the rainy season and of two-week intervals in the non-rainy season to verify continued BMP implementation.
- Arrange for contractor's Water Pollution Control Manager, foreman, and/or construction supervisor to monitor onsite contaminated soil storage and disposal procedures.
- Monitor air quality continuously during excavation operations at all locations containing hazardous material.
- Coordinate contaminated soils and hazardous substances/waste management with the appropriate federal, state, and local agencies.

- Implement WM-4, Spill Prevention and Control, to prevent leaks and spills as much as possible.

## References

Blueprint for a Clean Bay: Best Management Practices to Prevent Stormwater Pollution from Construction Related Activities; Santa Clara Valley Nonpoint Source Pollution Control Program, 1995.

Processes, Procedures and Methods to Control Pollution Resulting from All Construction Activity, 430/9-73-007, USEPA, 1973.

Stormwater Quality Handbooks - Construction Site Best Management Practices (BMPs) Manual, State of California Department of Transportation (Caltrans), November 2000.

Stormwater Management for Construction Activities; Developing Pollution Prevention Plans and Best Management Practice, EPA 832-R-92005; USEPA, April 1992.

August 14, 2006

**LETTER OF CLARIFICATION NO.1  
TO PROSPECTIVE BIDDERS FOR THE CONSTRUCTION OF THE PENITENCIA WATER  
TREATMENT PLANT LANDSCAPING AND SITE IMPROVEMENT PROJECT  
PROJECT NO. 93234037**

Notice is given to the Prospective Bidders that the Contract Documents are clarified as hereinafter set forth.

**NOTICE TO PROSPECTIVE BIDDERS AND BID DOCUMENTS**

**TABLE OF CONTENTS**

**Attachment 1 (Signatures)** listed in the sub-heading "Documents to be submitted within 2 days after Bid Opening." shall be moved to the sub-heading, "Documents to be submitted at time of Bid Opening."

**ATTACHMENT A: LISTING OF BID ITEMS**

1. On Page 1 of 5, **CHANGE** the approximate quantity of Bid Item No.7, "Irrigation Valves" from 149 Each to 125 Each. See Revised Attachment A, attached.
2. On Page 2 of 5, **CHANGE** the approximate quantity of Bid Item No. 9, "Irrigation Lateral Lines" from 36,377 Linear Feet to 33,247 Linear Feet. See Revised Attachment A, attached.
3. On Page 2 of 5, **CHANGE** the approximate quantity of Bid Item No.10, "Irrigation Controller" from 1 Each to 3 Each. See Revised Attachment A, attached.
4. On Page 2 of 5, **CHANGE** the Description of Bid Item No. 13 to "Off Duty Police Officer" See Revised Attachment A, attached.
5. On Page 2 of 5, **CHANGE** the approximate quantity of Bid Item No.15, "Landscape Metal Screen" from 6,780 Sq. Ft. to 3,972 Sq. Ft. See Revised Attachment A, attached.
6. On Page 2 of 5, **CHANGE** the approximate quantity of Bid Item No.16, "1 Gallon Plant Materials" from 20,781 Each to 16,938 Each. See Revised Attachment A, attached.
7. On Page 3 of 5, **CHANGE** the approximate quantity of Bid Item No.18, "15 Gallon Shrub" from 51 Each to 108 Each. See Revised Attachment A, attached.
8. On Page 3 of 5, **CHANGE** the approximate quantity of Bid Item No.19, "15 Gallon Tree" from 207 Each to 166 Each. See Revised Attachment A, attached.



9. On Page 3 of 5, **CHANGE** the approximate quantity of Bid Item No.20, "24" Box Tree" from 104 Each to 142 Each. See Revised Attachment A, attached.
10. On Page 4 of 5, **DELETE** Bid Item No. 26, METAL EDGING. See Revised Attachment A, attached.
11. On Page 4 of 5, **CHANGE** the approximate quantity of Bid Item No.27, "Mulch" from 2,466 Cu. Yd. to 1,788 Cu. Yd. See Revised Attachment A, attached.
12. On Page 4 of 5, **CHANGE** the approximate quantity of Bid Item No.29, "Decorative CMU Walls and Trellises" from 56 LF. to 128 LF. See Revised Attachment A, attached.

## PROPOSAL FORM

Page 4 of 4, Insert "625" into the blank field of the first sentence of the first paragraph. See Revised Proposal Form, attached (Attachment B).

## SPECIFICATIONS

### TABLE OF CONTENTS

**DELETE** Article 12.01.02. Inspection and Acceptance of Work.

### SPECIAL PROVISIONS

#### SPECIFICATION ARTICLE 12.01 -- Time of Work

**REPLACE** Article 12.01 with the Revised Article 12.01, attached (Attachment C).

#### SPECIFICATION ARTICLE 12.01.02 -- Inspection and Acceptance of Work

**DELETE** Article 12.01.02 in its entirety.

#### SPECIFICATION ARTICLE 13.06 -- Traffic Control Measures

**REPLACE** Article 13.06 with the Revised Article 13.06, attached (Attachment D).

#### SPECIFICATION ARTICLE 13.08 -- Materials and Equipment Guaranty

**REPLACE** Article 13.08 with the Revised Article 13.08, attached (Attachment E).

#### SPECIFICATION ARTICLE 14.03 -- Permits and Agreements

- B. Permits and Agreements Obtained and Paid for by the Contractor: **REPLACE** this paragraph with the Revised Article 14.03, Paragraph B, attached (Attachment F).

#### SPECIFICATION ARTICLE 15.02.02 -- Vibration

**REPLACE** Article 15.02.02 with the Revised Article 15.02.02, attached (Attachment G).

## TECHNICAL PROVISIONS

### SPECIFICATION SECTION 02230 -- DEMOLITION, SITE CLEARING, and MOBILIZATION

**ADD** Paragraph D to Part 1.03 SUBMITTALS:

- D. A staging plan for transferring over electrical power and communications from the existing Guard House to the new Guard House, prior to the start of any work on the new Guard House.

### SPECIFICATION SECTION 02315 -- EXCAVATION, BACKFILLING, COMPACTING & GRADING

**REPLACE** Part 3.09, Paragraph B with the following:

- B. "The Contractor will sample imported fill materials from their designated source and submit all samples to the approved independent testing laboratory before delivery to the project site."

### SPECIFICATION SECTION 02810 -- IRRIGATION SYSTEM

**ADD** the following sentence to Part 1.08, Paragraph G: "The water meters supplied and installed by the contractor are for District use only, and do not require a connection with any external water supplier."

### SPECIFICATION SECTION 02823 -- LANDSCAPE METAL SCREEN

**DELETE** the last sentence from Part 1.06: "~~Warranties shall commence on date of Notice of Completion.~~"

### SPECIFICATION SECTION 02825 -- ORNAMENTAL STEEL FENCE SYSTEM, INDUSTRIAL

**ADD** the following to Part 1.07: "The Front Vehicle Gate shall be paid for under Bid Item No. 34, FRONT VEHICLE GATE AND ENTRY GATE OPERATOR."

### SPECIFICATION SECTION 02826 -- ORNAMENTAL STEEL FENCE, ENTRY GATE OPERATOR

- 1. **REPLACE** Part 1.01 with the following:

#### 1.01 - DESCRIPTION

The Contractor shall provide all labor, materials, and appurtenances necessary for the fabrication and installation of the ornamental steel fence vehicle gate, and entry gate operator system defined herein.



2. **REPLACE** Part 1.08 with the following:

**1.08 - MEASUREMENT AND PAYMENT**

Full Compensation for furnishing all labor, materials, tools, equipment, and incidentals, including structure excavation, and concrete pad placement for the Front Vehicle Gate, and Entry Gate Operator, and for doing all the work required, shall be included in the lump sum price bid for FRONT VEHICLE GATE AND ENTRY GATE OPERATOR, Bid Item No. 34.

**SPECIFICATION SECTION 02900 -- LANDSCAPE PLANTING**

1. **DELETE** Part 1.09, Paragraph F.
2. **DELETE** the following sentence from Part 3.12, Paragraph A: ~~"The Plant Establishment Phase shall begin on the date the Engineer gives written provision and acceptance of the work of the Installation Phase."~~
3. **ADD** the following to Part 3.12 Paragraph B: "The Contractor shall also maintain the existing landscaping specified in Section 3.13 during the Plant Establishment Phase."

**SPECIFICATION SECTION 07420 -- PREFORMED METAL PANELS**

**REPLACE** Part 1.01 Paragraph B with the revised Part 1.01 Paragraph B, attached (Attachment H).

**APPENDICES**

APPENDIX B -- BAAQMD Regulations For Soil Excavation, Reuse & Disposal  
**INSERT** the attached Asbestos Dust Mitigation Plan Application (Attachment I), at the back of the appendix.

**DRAWINGS**

**Sheet L-1**

**ADD** hand dig zones as shown in Attachment 1.

**Sheet L-2**

**ADD GENERAL NOTE # 7** to read, "THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING A FUNCTIONING SECURITY GUARD FACILITY AT ALL TIMES."

**Sheet L-3**

**DELETE** metal edging as shown in Attachment 2.

**Sheet L-4**

**DELETE** Detail 4 - Metal Edging.

#### **Sheet L-10**

1. **REVISE** Sheet L-10 Notes as shown in Attachment 3.1.
2. **REVISE** Sheet L-10 Plan as shown in Attachment 3.2.

#### **Sheet A-12**

1. **REVISE** Sheet A-12 Elevation as shown in Attachment 4.1.
2. **REVISE** Sheet A-12 Plan as shown in Attachment 4.2.
3. **REVISE** Sheet A-12 Section as shown in Attachment 4.3.

#### **Sheet A-13**

**DELETE** Detail 1 and 3.

#### **Sheet A-15**

**REVISE** Sheet A-15, Key Notes and Plan 1, as shown in Attachment 12.

#### **Sheets P-2**

**DELETE** metal edging as shown in Attachment 5.

#### **Sheets P-3**

**DELETE** metal edging as shown in Attachment 6.

#### **Sheets P-4**

**DELETE** metal edging as shown in Attachment 7.

#### **Sheets P-5**

**DELETE** metal edging as shown in Attachment 8.

#### **Sheet I-1 Irrigation Legend**

1. Controller [B] **REPLACE** Number: ET2000e—40—RRe/SSE—R with Number: ET2000e—40—M—RRe/SSE—R
2. Controller [E] **REPLACE** Number: ET2000e—40—R—RRe—G—RB— TP110 with Number: ET2000e—40—R—M—RRe—G—RB—TP1.

#### **Sheet E-1**

**ADD** conduit and wire schedule as shown in Attachment 9.

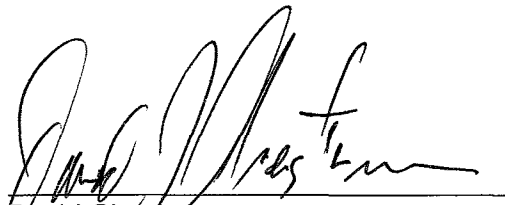
**Sheet E-2**

1. **REVISE** callout referring to type "B" pathway bollard light symbol as shown in Attachment 10.
2. **ADD NOTE** to show 1-1/4" C for gate controller power circuit as shown in Attachment 10.
3. **ADD NOTE** to show 3/4" C for exterior light as shown in Attachment 10.

**Sheet E-3**

**REPLACE** the word "sleeve" with "encasement" as shown in Attachment 11.

THIS LETTER OF CLARIFICATION SHALL BE ATTACHED TO AND FORM A PART OF THE SPECIFICATIONS AND CONTRACT DOCUMENTS FOR THE CONSTRUCTION OF THE PENITENCIA WATER TREATMENT PLANT LANDSCAPING AND SITE IMPROVEMENT PROJECT.



David Chesterman  
Deputy Operating Officer  
Capital Program Services Division

# **L.O.C. No.1 – Attachment A**

## ATTACHMENT A LISTING OF BID ITEMS

| Item No. | Description of Item                   | Approximate Quantity/Unit*       | Unit Price | Total |
|----------|---------------------------------------|----------------------------------|------------|-------|
| 1        | Storm Water Pollution Prevention Plan | Lump Sum                         |            |       |
| 2        | Mobilization                          | Lump Sum                         |            |       |
| 3        | Demolition, Clearing & Grubbing       | Lump Sum                         |            |       |
| 4        | Soil/Site Preparation                 | Lump Sum                         |            |       |
| 5        | NOA Mitigation Plans                  | Lump Sum                         |            |       |
| 6        | Imported Topsoil                      | <u>100</u><br>Cu. Yd.            |            |       |
| 7        | Irrigation Valves                     | <u>125</u><br><u>149</u><br>Each |            |       |
| 8        | Irrigation Main Lines                 | <u>5,934</u><br>Linear Feet      |            |       |

| Item No. | Description of Item  | Approximate Quantity/Unit*                 | Unit Price | Total |
|----------|--|--|------------|-------|
| 9        | Irrigation Lateral Lines   | 33,247<br><del>36,377</del><br>Linear Feet |            |       |
| 10       | Irrigation Controllers   | 3<br><del>1</del><br>Each                  |            |       |
| 11       | Irrigation Bubblers  | 602<br>Each                                |            |       |
| 12       | Irrigation Sprinkler Heads                                       | 1,233<br>Each                              |            |       |
| 13       | Off Duty Police Officer<br><del>Traffic Control Monitoring</del> | 300<br>Hours                               |            |       |
| 14       | 2" Water Meters  | 2<br>Each                                  |            |       |
| 15       | Landscape Metal Screen   | 3,972<br><del>6,780</del><br>Sq. Ft.       |            |       |
| 16       | 1 Gallon Plant Materials   | 16,938<br><del>20,781</del><br>Each        |            |       |

| Item No. | Description of Item                   | Approximate Quantity/Unit* | Unit Price | Total |
|----------|---------------------------------------|----------------------------|------------|-------|
| 17       | 5 Gallon Plant Materials              | <u>2,427</u><br>Each       |            |       |
| 18       | 15 Gallon Shrub                       | 108<br><u>51</u><br>Each   |            |       |
| 19       | 15 Gallon Tree                        | 166<br><u>207</u><br>Each  |            |       |
| 20       | 24" Box Tree                          | 142<br><u>104</u><br>Each  |            |       |
| 21       | District Furnished Plant Installation | Lump Sum                   |            |       |
| 22       | Lawn Sod Installation                 | <u>222</u><br>Sq. Ft.      |            |       |
| 23       | Hydro-seeding                         | <u>222,858</u><br>Sq. Ft.  |            |       |
| 24       | Plant Establishment Maintenance       | <u>12</u><br>Months        |            |       |

| Item No. | Description of Item   | Approximate Quantity/Unit*       | Unit Price | Total |
|----------|---|----------------------------------|------------|-------|
| 25       | Gravel for Non Landscaped Areas                                 | <u>50</u><br>Cu.Yd.              |            |       |
| 26       | Metal Edging  | <u>2,852</u><br>Linear Feet      |            |       |
| 27       | Mulch   | 1,788<br><u>2,466</u><br>Cu. Yd. |            |       |
| 28       | Fascia Panels and Supports                                      | <u>4,000</u><br>Sq. Ft.          |            |       |
| 29       | Decorative CMU Walls and Trellises                              | 128<br><u>56</u><br>Linear Feet  |            |       |
| 30       | Guard House   | Lump Sum                         |            |       |
| 31       | Telecommunications System                                       | Lump Sum                         |            |       |
| 32       | Ornamental Metal Fence including Pilasters and Pedestrian Gates | <u>65</u><br>Linear Feet         |            |       |



| Item No. | Description of Item                           | Approximate Quantity/Unit* | Unit Price | Total |
|----------|---|----------------------------|------------|-------|
| 33       | Site Lighting                                 | Lump Sum                   |            |       |
| 34       | Front Vehicle Gate and Entry Gate Operator    | Lump Sum                   |            |       |
| 35       | Low Rail Fence                                | <u>950</u><br>Linear Feet  |            |       |
| 36       | Concrete Walkway & Steps                      | <u>282</u><br>Sq. Ft.      |            |       |
| 37       | Maintenance of Existing Landscaping to Remain | <u>10</u><br>Months        |            |       |
| 38       | Extra Work as Directed by the Engineer        | Lump Sum                   | \$250,000  |       |

\* These quantities are representative of the Work and are not to be used for estimating. It is the sole responsibility of the Contractor to establish the project requirements.

**END OF BID ITEMS**

# L.O.C. No.1 – Attachment B

SANTA CLARA VALLEY WATER DISTRICT

## PROPOSAL FORM

Honorable Board of Directors  
Santa Clara Valley Water District  
5750 Almaden Expressway  
San Jose, California 95118

The undersigned, as Bidder, or the duly authorized representative of the Bidder, having duly executed the Noncollusion Affidavit submitted hereto and having carefully examined the Drawings and Specifications and read the instructions set forth in the Notice to Prospective Bidders calling for Proposals for the construction of Penitencia Water Treatment Plant Landscaping and Site Improvement Project, all within the boundaries of the Santa Clara Valley Water District, declare that the only persons or parties interested in this proposal as principals are those named herein; that I have carefully examined the location of the proposed work, the annexed proposed form of contract, and the plans therein referred to; and I propose and agree that if this proposal is accepted, that I will contract with the District, in the form of the copy of the contract annexed hereto, to provide all necessary machinery, tools, apparatus and other means of construction, and to do all work and furnish all the materials specified in the contract, in a manner and time therein prescribed, and according to the requirements of the Engineer as therein set forth, and that I will take in full payment therefor:

TOTAL BID: (\$ \_\_\_\_\_)

Bid items are listed and attached to this form as "Attachment A," the summary of which represents the total bid shown above.

The receipt of the following Addenda and/or letters of clarification is acknowledged:

### Addenda

- |                |           |
|----------------|-----------|
| 1. Dated _____ | No. _____ |
| 2. Dated _____ | No. _____ |
| 3. Dated _____ | No. _____ |
| 4. Dated _____ | No. _____ |

### Letters of Clarification

- |                |
|----------------|
| 1. Dated _____ |
| 2. Dated _____ |
| 3. Dated _____ |
| 4. Dated _____ |

## DESIGNATION OF SUBCONTRACTORS

In compliance with the provisions of Section 4100 4109 of the Public Contract Code of the State of California and any amendments thereto, the undersigned Bidder shall list below the name and business address of each subcontractor who will perform work under this Bid in excess of ½ of 1 percent of the Bidder's Total Bid Price, and shall also list the portion of the work which will be done by such subcontractor. After the opening of bids, no changes or substitutions will be allowed except as otherwise provided by law. The listing of more than one subcontractor for each item of work to be performed with the words "and/or" will not be permitted. Failure to comply with this requirement may render the Bid nonresponsive and may cause its rejection.

|   | Work to be Performed | Percent of Total Contract | License Number & Date of Expiration | Subcontractor's Name & Address |
|---|----------------------|---------------------------|-------------------------------------|--------------------------------|
| 1 | _____                | _____                     | _____                               | _____                          |
|   |                      |                           | _____                               | _____                          |
|   |                      |                           | _____                               | _____                          |
| 2 | _____                | _____                     | _____                               | _____                          |
|   |                      |                           | _____                               | _____                          |
|   |                      |                           | _____                               | _____                          |
| 3 | _____                | _____                     | _____                               | _____                          |
|   |                      |                           | _____                               | _____                          |
|   |                      |                           | _____                               | _____                          |
| 4 | _____                | _____                     | _____                               | _____                          |
|   |                      |                           | _____                               | _____                          |
|   |                      |                           | _____                               | _____                          |
| 5 | _____                | _____                     | _____                               | _____                          |
|   |                      |                           | _____                               | _____                          |
|   |                      |                           | _____                               | _____                          |
| 6 | _____                | _____                     | _____                               | _____                          |
|   |                      |                           | _____                               | _____                          |
|   |                      |                           | _____                               | _____                          |
| 7 | _____                | _____                     | _____                               | _____                          |
|   |                      |                           | _____                               | _____                          |
|   |                      |                           | _____                               | _____                          |

### **EQUIPMENT/MATERIAL SOURCE INFORMATION**

The undersigned, as Bidder, shall indicate opposite each item of equipment or material listed below, the name of the manufacturer of the equipment or material proposed to be furnished under the Bid. The listing of more than one manufacturer for each equipment/material to be furnished with the words "and/or" will not be permitted. Failure to comply with this requirement may render the Bid nonresponsive and may cause its rejection.

#### **Equipment/Material**

#### **Manufacturer**

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### **Listing of Construction Trades**

The Bidder anticipates that the following construction trades (carpenter, plumber, etc.) will be employed on this project:

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I agree to complete all the work within 625 calendar days from the First Chargeable Day of the Contract as stated in the Notice to Begin Work and that in case I default in the execution of the required Contract, or in furnishing to the District the necessary bond, within the time fixed by the Law under which the call for Proposals is made, the proceeds of the check or bidder's bond accompanying this Proposal shall be forfeited and become the property of the Santa Clara Valley Water District.

I STATE AND CERTIFY THAT I HAVE READ AND UNDERSTOOD AND WILL COMPLY WITH EACH AND ALL OF THE REQUIREMENTS SPECIFIED IN THIS PROPOSAL FORM, AND I STATE UNDER PENALTY OF PERJURY THAT EACH AND ALL OF THE STATEMENTS I HAVE MADE ABOVE ARE TRUE TO THE BEST OF MY KNOWLEDGE.

Date:

Name and Address of Bidder:

Phone Number:

Signature of Person Authorized to Sign Bid:

Signer's Name and Title (Print):

Contractor's California License Number and  
Date of Expiration:

License Classifications:

**12.01 Time of Work**

The Contractor shall complete all work required under this Contract before the expiration of 625 calendar days from the First Chargeable Day of the Contract as specified in the Notice to Begin Work. The Contract period consists of both an Installation Phase, which includes architectural work and landscaping work, and a Plant Establishment Phase. The Installation Phase shall be 260 calendar days and the Plant Establishment Phase shall be 365 calendar days. The Contractor shall complete all work required for the Installation Phase before the expiration of 260 calendar days from the First Chargeable Day of the Contract as specified in the Notice to Begin Work. The Contractor shall complete all work required for the Plant Establishment Phase before the expiration of 365 calendar days from provisional acceptance of the landscaping work as described below.

The architectural work under the Installation Phase includes all work required to complete the installation of metal screens and fascia panels, ornamental steel fence and entry gate system, guard house, site lighting and other associated work as shown on the Drawings and specified in these Specifications. Upon completion of the architectural work as defined above, the Engineer will conduct an inspection. The Contractor, the Engineer, and such others, as the Engineer shall direct, shall be present at a mutually agreed upon date for the inspection. At the end of the inspection, the Engineer will give the Contractor a punch list for corrective action on defective work. The Contractor shall perform the corrective actions within 10 days after the inspection. Corrective work shall be done in accordance with the Drawings and these Specifications and as directed by the Engineer. If, after the inspection or after corrective work has been completed, the Engineer is satisfied that all architectural work has been performed in compliance with the Drawings and these Specifications, the Engineer will recommend that the architectural work be accepted by the Board and that the Contractor be relieved of the responsibility related to such work. Upon acceptance of the architectural work by the Board, the District will take possession of, and use, part of the project related to the architectural work. Attention is directed to Article 12.04 and Article 13.08.

The landscaping work under the Installation Phase includes all work required to complete the installation of landscaping, planting, hydroseeding, irrigation system and other associated work as shown on the Drawings and specified in these Specifications. Upon completion of the landscaping work as defined above, the Engineer will conduct an inspection. The Contractor, the Engineer, and such others, as the Engineer shall direct, shall be present at a mutually agreed upon date for the inspection. At the end of the inspection, the Engineer will give the Contractor a punch list for corrective action on defective work. The Contractor shall perform the corrective actions within 10 days after the inspection. Corrective work shall be done in accordance with the Drawings and these Specifications and as directed by the Engineer. If, after the inspection or after corrective work has been completed, the Engineer is satisfied that all landscaping work has been performed in compliance with the Drawings and these Specifications, the Engineer will grant the Contractor a written notice of provisional acceptance of the landscaping work. Attention is directed to Article 12.04 and Article 13.08.

The Plant Establishment Phase shall commence the day after written notice of provisional acceptance of the landscaping work is granted. Attention is directed to Article 12.04 and Section 02900-3.14.

**13.06. Traffic Control Measures**

The Contractor shall provide an off duty police officer or other law enforcement professional, to assure the safe crossing of pedestrians and bicycles at the intersection of Whitman Way and Grossmont Drive as directed by the Engineer.

The off duty police officer shall be located at Whitman Way and Grossmont Drive during the starting and ending times of Noble Elementary School when more than ten (10) deliveries are anticipated to arrive at the plant during a single day, or as directed by the Engineer.

The Contractor shall notify the Engineer at least 3 working days in advance of any single day when more than ten (10) deliveries are anticipated to arrive at the plant.

The Contractor shall submit to the Engineer for approval the qualifications of the off duty police officer or other law enforcement professional, prior to the commencement of any deliveries to the project site. Full compensation for doing all work necessary to provide 300 hours of traffic control, including all labor, service, and submittals shall be included in price bid per hour for OFF DUTY POLICE OFFICER, Bid Item No. 13.

**13.08. Materials and Equipment Guaranty**

The Contractor shall furnish a written guaranty covering all materials and equipment furnished and installed by the Contractor under the Installation Phase, with the exception of the plant materials, and shall be responsible for the full expense incidental to making good any and all defective materials and equipment covered.

Except noted otherwise, all materials and equipment furnished and installed by the Contractor under the Installation Phase, with the exception of the plant materials, shall be covered by guaranty for a period of 3 years after completion and acceptance of the architectural work done under the Installation Phase of this Contract.

The Contractor shall also cover by guaranty for a period of 3 years all utilities repaired, replaced, or crossed by the Contractor in connection with the work done under this Contract.

The Contractor shall also cover by guaranty for a period of 3 years all paving placed, including the paving replaced over the trench. Any settlement or failure of the paving shall be repaired, at the Contractor's expense, to the satisfaction of the District and the jurisdiction having control.

The warranty period shall begin after acceptance of the architectural work done under the Installation Phase of this Contract.

The above guarantees are covenants, the performance of which shall be secured by a surety bond which shall be delivered to the District by the Contractor before acceptance of the architectural work under the Installation Phase of this Contract. Said bond shall be in the form satisfactory to the District in an amount equal to 10 percent of the final Contract amount. Said bond shall remain in force for the period of guaranty. The Contractor may extend the expiration date of the performance bond filed with the Contract for a period of 3 years after date of acceptance of the architectural work, in lieu of the special surety bond.

Any work performed under the guaranty shall comply in all respects with the requirements of these Contract Documents.

Should the Contractor fail to comply with any guaranty provided by this Contract within a reasonable time to be specified by the District, the District may, at its discretion, proceed to have any failure, defect or damage repaired, corrected or made good at the expense of the Contractor, whose obligation under this Contract includes the obligation to pay the costs and charges therefore immediately upon demand.



**L.O.C. No. 1 – Attachment F**

**B. Permits and Agreements obtained and paid for by the Contractor**

- Storm Water Pollution Prevention Plan (SWPPP)
- All vehicle hauling permits
- BAAQMD's Asbestos Dust Mitigation Plan: Contact jsimon@baaqmd.gov at (415) 749-4780. This permit typically is 2 to 4 weeks to obtain.

Copies of the applicable permits are attached to these Specifications as Appendix A and made a part hereto. The Contractor shall be responsible for complying with all relevant conditions of said permits.

**15.02.02. Vibration**

The Contractor shall not operate or permit the operation of any equipment or device that causes vibration exceeding the peak particle velocity of 0.1 in/sec along the Plant property line. The Contractor shall conduct vibration monitoring to monitor Contractor's compliance with the vibration level for any impact producing construction activity, or as directed by the Engineer. If vibration is found to be above maximum level allowed, the offending vibration producing equipment or activity shall cease until the vibration level is within the specified limit.

**Section 07420**

1.01 B. Special Requirement:

A change in the specified material may be required by the Engineer after review of the submitted materials and mock-up. The Contractor is advised that the panel submittal will include the mock up panels, shop drawings, product data, color samples for mock-up fascia panels only, and temporary installation procedures. Only two six-foot long mock-up panels shall be required and installed, in the location as directed by the Engineer, and the Contractor shall notify the Engineer within 24 hours of the installation. This submittal must take place within 30 days of the Notice to Proceed. The Engineer will review and return mock-up submittal within 10 days. Upon Engineer's approval of mock-up submittal, Contractor shall install mock-up(s) within 20 days. Upon Contractor installation of mock-up(s), Engineer will have 14 days to review and approve. The Contractor shall remove temporary mock-up(s) if required by the Engineer.

The Contractor shall request the Engineer to inspect and review the panels prior to placement of an order for the final quantity of material. Should the Engineer require the Contractor to change panel materials, any additional compensation based on a change of materials for the panels shall be furnished through EXTRA WORK AS DIRECTED BY THE ENGINEER, Bid Item No. 37.

All other conditions listed in this Article still apply.

Contractor shall still be required to submit on fascia system in accordance with Article 1.03.

# L.O.C. No.1 – Attachment I



BAY AREA AIR QUALITY MANAGEMENT DISTRICT  
939 Ellis Street  
San Francisco, California 94109  
(415) 771-6000

For District Use Only

Date  
Rec'd  
File #

## ASBESTOS AIRBORNE TOXIC CONTROL MEASURE FOR CONSTRUCTION AND GRADING OPERATIONS

§ 93105, Title 17, California Code of Regulations

### ASBESTOS DUST MITIGATION PLAN APPLICATION

#### 1. Company and Project Information

| Company Name and Address |     | Project Location           |     |
|--------------------------|-----|----------------------------|-----|
| Name                     |     | Location                   |     |
| Address                  |     | Address                    |     |
| City/State               | Zip | City/State                 | Zip |
| Contact                  |     | Start Date:                |     |
| Phone                    | Fax | Estimated Completion Date: |     |

The following information is requested to assist in the evaluation of your Asbestos Dust Mitigation Plan. Omission of this information may result in a delay of the completion of the evaluation and approval of the plan. Please provide the information requested below; place a checkmark in front of each of the categories that applies.

#### 2. Detailed Project Information

**Type of Project:** (Check all that applies)

- ☐ Road or Railway Construction
- ☐ Road Maintenance
- ☐ Housing Development
- ☐ Commercial Property Development

- ☐ Trenching / Utilities Work
- ☐ Other (please describe)

#### 3. Detailed Site Information

**Areas and Facilities within a quarter mile (400 meters) of the Project:** (Check all that applies)

- ☐ Residential
- ☐ Commercial
- ☐ Industrial
- ☐ Rural
- ☐ Hospital / Nursing Home
- ☐ School
- ☐ Park / Playground
- ☐ Other (please describe)

# ASBESTOS DUST MITIGATION PLAN APPLICATION

BAY AREA AIR QUALITY MANAGEMENT DISTRICT 939 Ellis Street, San Francisco, CA 93109

## 4. Addition Information

The following information **MUST** be included:

Map(s) clearly indicating:

- |  |  |
|--|--|
| <input type="checkbox"/> Property lines / boundaries   | <input type="checkbox"/> Storage areas / piles     |
| <input type="checkbox"/> Rights of way / easements     | <input type="checkbox"/> Track-out control         |
| <input type="checkbox"/> Areas to be cleared or graded | <input type="checkbox"/> Staging areas for removal |
| <input type="checkbox"/> Trenching areas               | <input type="checkbox"/> Truck routes              |
| <input type="checkbox"/> Excavation sites              | <input type="checkbox"/> On-site parking lots      |

If available, please attach the following information:

- ☐ Geologic Information
- ☐ Topographical Maps
- ☐ Meteorological Data

## CONSTRUCTION AND GRADING OPERATIONS CHECKLIST FOR PROJECTS GREATER THAN AN ACRE

### ELEMENTS THAT MUST BE INCLUDED:

Each of the following sources of dust emissions **MUST** be addressed in the Asbestos Dust Mitigation Plan:

- ☐ Track-out onto the paved public road;
- ☐ Active storage piles;
- ☐ Inactive disturbed surface areas and storage piles;
- ☐ Traffic on unpaved on-site roads;
- ☐ Earthmoving activities;
- ☐ Off-site transport of materials; and
- ☐ Post-project stabilization of disturbed soil surfaces.

### ASBESTOS AIR MONITORING PLANS:

If required by the District, complete an Asbestos Air Monitoring Plan for District approval.

An air monitoring plan **MAY BE** required if one or more of the following lies within a quarter mile (400 meters) of any boundary of an area to be disturbed:

- ☐ Residence;
- ☐ School / Daycare center;
- ☐ Industrial Facility
- ☐ Business;
- ☐ Park / Playground;
- ☐ Hospital / Nursing Home

Development of an Asbestos Air Monitoring Plan does not constitute a requirement to implement air monitoring.

However, if the District would like to determine the effectiveness of the application of the dust mitigation measures listed in your dust mitigation plan, the plan would be required to be implemented within one business day of notification from the District.

# ASBESTOS DUST MITIGATION PLAN APPLICATION

BAY AREA AIR QUALITY MANAGEMENT DISTRICT 939 Ellis Street, San Francisco, CA 93109

## 5. Track-out onto the paved public road

Please mark the box preceding each measure that will be implemented:

### THIS MEASURE MUST BE ADDRESSED:

- ☐ Any visible track-out on a paved public road at any location where vehicles exit the work site **MUST** be removed; Removal **MUST** be done using wet sweeping or a HEPA filter-equipped vacuum device at the end of the work day or at least one time per day.

### AND installation of one or more of the following track-out prevention measures:

- ☐ A gravel pad designed using good engineering practices to clean the tires of exiting vehicles  
☐ A tire shaker  
☐ A wheel wash system  
☐ Pavement extending for not less than fifty (50) consecutive feet from the intersection with the paved public road  
☐ Any other measure(s) as effective as the measures listed above: (Briefly describe below)

## 6. Active Storage Piles

### THIS MEASURE MUST BE ADDRESSED:

- ☐ Keep active storage piles adequately wet or covered with tarps.

## 7. Inactive Areas and Storage Piles

Please mark the box preceding each measure that will be implemented:

Control for disturbed surface areas and storage piles that will remain inactive for more than seven (7) days shall include one or more of the following:

- ☐ Keep the surface adequately wet;  
☐ Establish and maintain of surface crusting sufficient to satisfy the test in subsection 93105(h)(6);  
☐ Apply chemical dust suppressants or chemical stabilizers according to the manufacturer's recommendations;  
☐ Cover with tarp(s) or vegetative cover;  
☐ Install wind barriers of fifty percent (50%) porosity around three (3) sides of a storage pile;  
☐ Install wind barriers across open areas;  
☐ Any other measure(s) deemed as effective as the measures listed above. (Briefly describe below)

# ASBESTOS DUST MITIGATION PLAN APPLICATION

BAY AREA AIR QUALITY MANAGEMENT DISTRICT 939 Ellis Street, San Francisco, CA 93109

## 8. Traffic on On-Site Unpaved Roads, Parking Lots, and Staging Areas

Please mark the box preceding each measure that will be implemented

### THIS MEASURE MUST BE ADDRESSED:

- ☐ A maximum vehicle speed limit of fifteen (15) miles per hour or less;

### AND one or more of the following:

- ☐ Water every two hours of active operations or sufficiently often to keep the area adequately wetted;
- ☐ Apply chemical dust suppressants consistent with manufacturer's directions;
- ☐ Install wind barriers of fifty (50) percent porosity around three (3) sides of a storage pile;
- ☐ Maintain a gravel cover with a silt content that is less than five (5) percent and asbestos content that is less than 0.25 percent, as determined using an approved asbestos bulk test method, to a depth of three (3) inches on the surface being used for travel; or
- ☐ Any other measure(s) deemed as effective as the measures listed above. (Briefly describe below)

## 9. Earth Moving Activities

Please mark the box preceding each measure that will be implemented

### Control for earthmoving activities must include one or more of the following:

- ☐ Pre-wet the ground to the depth of anticipated cuts;
- ☐ Suspend grading operations when wind speeds are high enough to result in dust emissions crossing the property line, despite the application of dust mitigation measures;
- ☐ Apply water prior to any land clearing; or
- ☐ Any other measure(s) deemed as effective as the measures listed above. (Briefly describe below)

# ASBESTOS DUST MITIGATION PLAN APPLICATION

BAY AREA AIR QUALITY MANAGEMENT DISTRICT 939 Ellis Street, San Francisco, CA 93109

## 10. Off-Site Transport

Please mark the box preceding each measure that will be implemented:

### THIS MEASURE MUST BE ADDRESSED:

The owner or operator must ensure that no trucks are allowed to transport excavated material off-site unless:

- ☐ Maintain trucks such that no spillage can occur from holes or other openings in cargo compartments; **AND**
- ☐ Loads are adequately wet;

### AND Either of the following measures:

- ☐ Cover with tarps; or
- ☐ Load such that the material does not touch the front, back, or sides of the cargo compartment at any point less than six inches from the top and that no point of the load extends above the top of the cargo compartment.

## 11. Post Construction Stabilization of Disturbed Areas

Please mark the box preceding each measure that will be implemented:

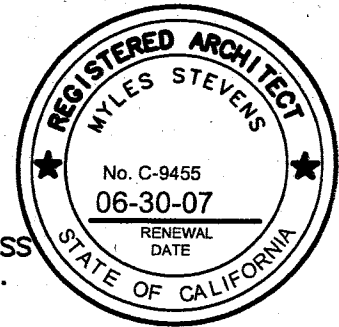
Upon completion of the project, disturbed surfaces shall be stabilized using one or more of the following:

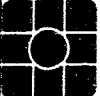

- ☐ Establish a vegetative cover;
- ☐ Place at least three (3.0) inches of non-asbestos-containing material;
- ☐ Paving; or
- ☐ Any other measure deemed sufficient to prevent wind speeds of ten (10) miles per hour or greater from causing visible dust emissions. (Briefly describe below)

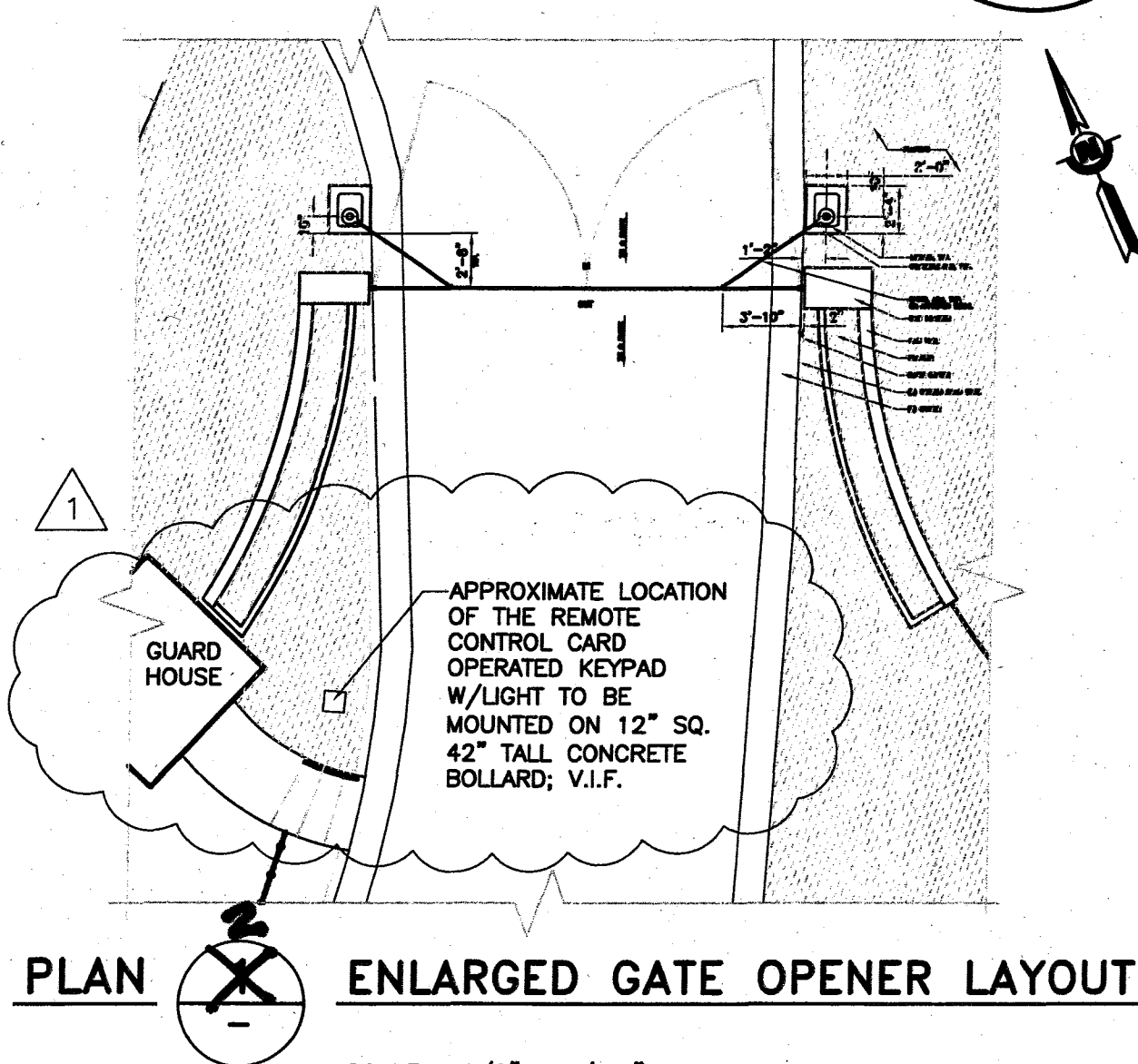


**NOTES:**

1. SEE NOTES G-3 AND DRAWINGS L-6, E-1 & E-2.
2. THE SWING GATE OPERATOR WITH DUAL MOTOR DC (BATTERY OPERATED) MODEL CSW-200-ULDMDC SHALL BE BY ELITE ACCESS SYSTEMS INC.; OR APPROVED EQUAL. CONTACT CHAMBERLAIN R. FIELD (510) 912-0915.
3. PROVIDE TWO CONCRETE MOUNTING PADS FOR TWO OPENERS AS SHOW ON THIS SHEET AND ON L-6. THE MOUNTING PAD SHALL BE 30" BELOW GRADE AND 6" ABOVE GRADE; FOLLOW MANUFACTURER'S RECOMMENDATIONS.
4. THE INSTALLED GATES MUST BE PROPERLY INSTALLED AND WORK FREELY IN BOTH DIRECTIONS PRIOR TO THE INSTALLATION OF THE GATE OPENERS.
5. PROVIDE CONTROLS FAR ENOUGH FROM THE GATE SO THAT THE USER IS PREVENTED FROM COMING IN CONTACT WITH GATE WHILE OPERATING THE CONTROLS.
6. CONTROLS INTENDED TO BE USED TO RESET AN OPENER AFTER 2 SEQUENTIAL ACTIVATIONS OF THE ENTRAPMENT PROTECTION DEVICE. ACCESSIBLE CONTROLS SHALL HAVE A SECURITY FEATURE TO PREVENT UNAUTHORIZED USE.
7. ALL WARNING SIGNS AND PLACARDS MUST BE INSTALLED; FOLLOW MANUFACTURER'S RECOMMENDATIONS.
8. UTILIZE CONTACT SENSORS.
9. CONSIDERED UPHILL (7% SLOPE) INSTALLATIONS. PROVIDE SWIVEL ARMS AND ADJUSTABLE HINGES.
10. PROVIDE FOUR GROUND SAFETY LOOPS, KNOX BOX, FOUR PHOTO EYES AND SAFETY EDGES.
11. KEYPAD LOCATIONS SHALL BE ONE INSIDE GUARD HOUSE AND ONE OUTSIDE AT THE ROADWAY (REMOTE CONTROL CARD-READ OPERATING KEYPAD AS SHOWN ON SKETCH LSK-02).
12. INSTALL KEYPAD CONTROLS WHERE USERS CANNOT TOUCH, OR REACH WHILE OPERATING. SEE E-2 NOTES 5, 6, 7, 11, AND 12.
13. PROVIDE DETAILED AND DIMENSIONED SHOP DRAWINGS.




|  |   |   |  |
|--|---|---|--|
| Drawing Title<br>MAIN ENTRANCE DETAILS (L-10)  | Status<br>CLARIFICATION # 1   | Scale<br>NTS  | Date<br>8/10/06                                |
| Project Information<br> PENITENCIA WTP LANDSCAPE<br>+ SITE IMPROVEMENT<br>PROJECT, SAN JOSE. CA | Client<br>Santa Clara Valley Water District<br>5750 ALMADEN EXPWY<br>SAN JOSE, CA 95118-3686<br>CONTACT: EDWARD DRURY, P.E. FAX: (408) 266-0271 |  | Project Number<br>93234037<br>Sheet<br>LSK- 01 |



PLAN

ENLARGED GATE OPENER LAYOUT

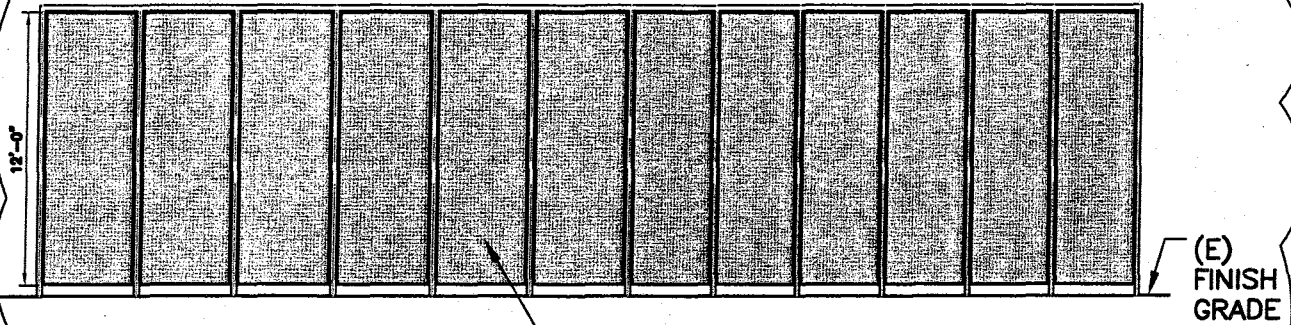
SCALE: 1/8" = 1'-0"

|   |  |                             |   |                            |
|---|--|-----------------------------|---|----------------------------|
| Drawing Title<br>PLAN 1 / ENLARGED GATE OPENER LAYOUT (L-10)                        |  | Status<br>CLARIFICATION # 1 | Scale<br>1/8" = 1'-0"   | Date<br>8/10/06            |
|  | Project Information<br>PENITENCIA WTP LANDSCAPE<br>+ SITE IMPROVEMENT<br>PROJECT, SAN JOSE, CA |                             | Client<br>Santa Clara Valley Water District<br>5750 ALMADEN EXPWY<br>SAN JOSE, CA 95118-3686<br>CONTACT: EDWARD DRURY, P.E. | Project Number<br>93234037 |
|   |  |                             | TEL: (408) 265-2607 x 2426<br>FAX: (408) 266-0271   | Sheet<br>LSK-02            |

STEVENS + ASSOCIATES  
 Phone: (415) 397-6500

855 SANSOME STREET, SECOND FLOOR  
 Fax: (415) 397-6525

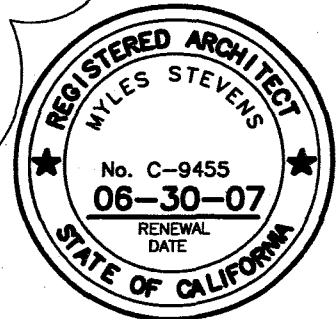
SAN FRANCISCO, CA 94111  
 e-mail: stevens@lanset.com

**ELEVATION**

2  
—

SCALE: 1/8" = 1'-0"

1

~~SECTION~~

3

SCALE:

Drawing Title

UTILITY BUILDING - SCREEN WALL (A-12)

Status

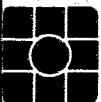
CLARIFICATION # 1

Scale

1/8"=1'-0"

Date

8/10/06



Project Information

PENITENCIA WTP LANDSCAPE  
+ SITE IMPROVEMENT  
PROJECT, SAN JOSE, CA

Client

**Santa Clara Valley Water District**

5750 ALMADEN EXPWY  
SAN JOSE, CA 95118-3686 TEL: (408) 265-2607 x 2426  
CONTACT: EDWARD DRURY, P.E. FAX: (408) 266-0271



Project Number

93234037

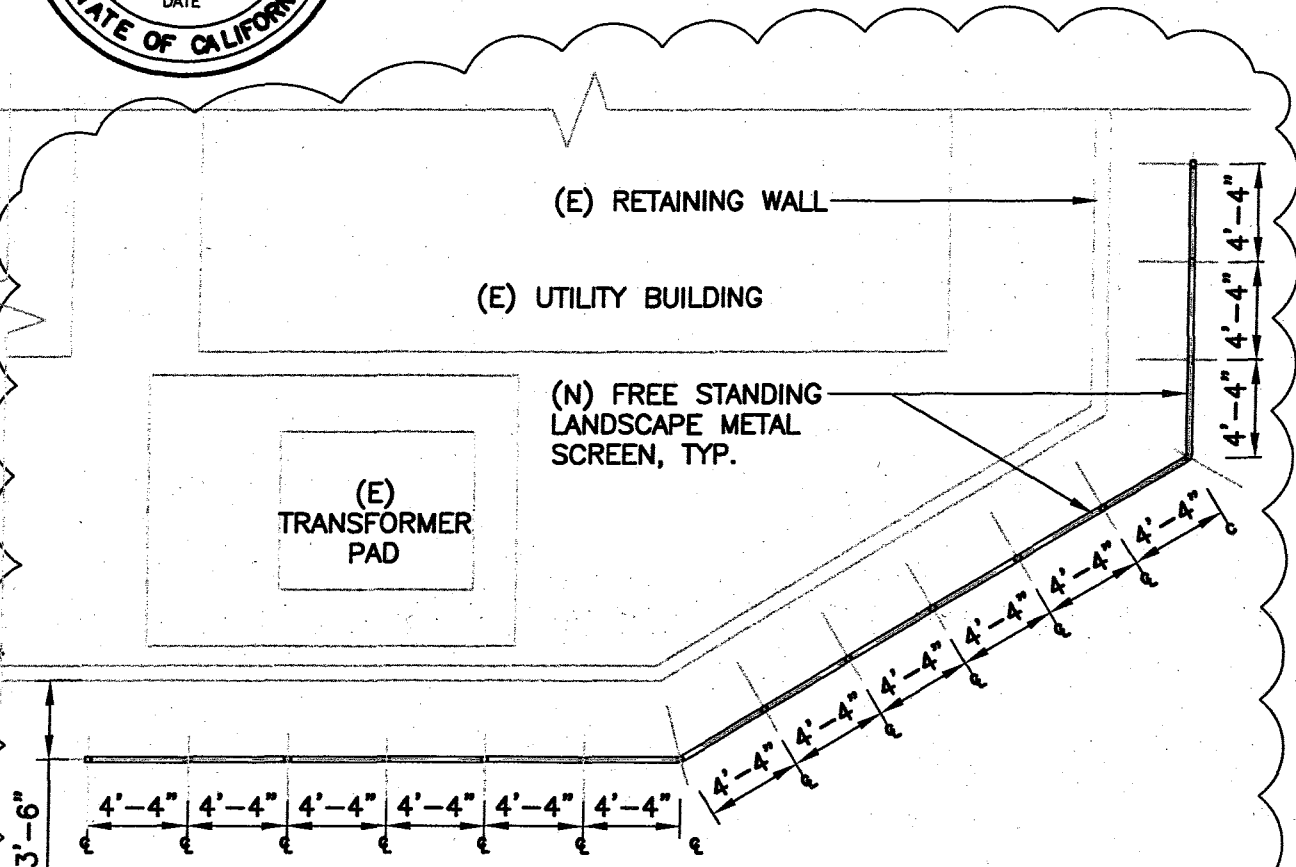
Sheet

LSK-04

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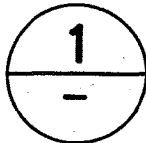
SAN FRANCISCO, CA 94111  
e-mail: stevens@lanset.com



### NOTES:

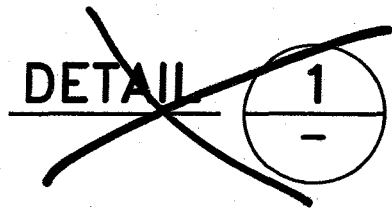
1. HAND DIG FOR (N) FOOTING EXCAVATIONS.
2. PROTECT (E) UTILITIES (BELOW AND ABOVE GROUND).
3. PROTECT (E) RETAINING WALL FOOTINGS.


**PLAN**



SCALE: 1/8" = 1'-0"

|   |  |   |                 |
|---|--|---|-----------------|
| Drawing Title   | Status   | Scale   | Date            |
| UTILITY BUILDING - SCREEN WALL (A-12)                                   | CLARIFICATION # 1  | 1/8"=1'-0"  | 8/10/06         |
| Project Information   | Client   | Project Number                                    |                 |
| PENITENCIA WTP LANDSCAPE<br>+ SITE IMPROVEMENT<br>PROJECT, SAN JOSE, CA | Santa Clara Valley Water District  | 93234037  |                 |
|   | 5750 ALMADEN EXPWY<br>SAN JOSE, CA 95118-3686<br>CONTACT: EDWARD DRURY, P.E. | TEL: (408) 265-2607 x 2426<br>FAX: (408) 266-0271 | Sheet<br>LSK-03 |

A triangle with the number 1 inside.

DETAIL 

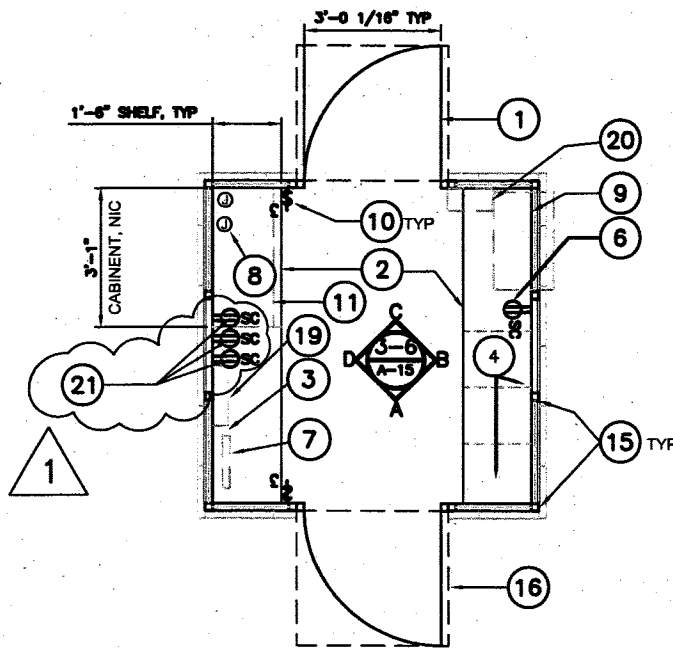
N.T.S.

SCALE: 3" = 1' 0"

SAN FRANCISCO, CA 94111  
e-mail: [stevens@lanset.com](mailto:stevens@lanset.com)

**KEY NOTES:**

- |   |  |
|---|--|
| ① SWING DOOR                              | ⑪ METAL STORAGE CABINET W/ ADJ. SHELVES & LOCK, N.I.C. |
| ② STEEL SHELF COVERED W/ PLASTIC LAMINATE | ⑫ INTERIOR RECESSED FLUORESCENT FIXTURES               |
| ③ ELECTRICAL CABINET                      | ⑬ EXTERIOR FLUORESCENT LIGHTS                          |
| ④ FILING CABINETS, N.I.C.                 | ⑭ TINTED, 3/4" DUAL PANE INSULATING GLASS              |
| ⑤ 3 CIRCUIT WIREMOLD                      | ⑮ FRAME: 2" x 2" X .063" TUBE STEEL                    |
| ⑥ 220 V OUTLET                            | ⑯ CANOPY   |
| ⑦ LOAD CENTER, S.E.D. E-2                 | ⑰ CANOPY LIGHTS  |
| ⑧ J-BOX, S.E.D. E-2                       | ⑱ NOT USED   |
| ⑨ THRU-WALL AIR CONDITIONER               | ⑲ EXTERIOR LTG. CONTROL PANEL, S.E.D. E-2              |
| ⑩ WALL MOUNTED THREE-WAY SWITCH           | ⑳ TELEPHONE CABINET, S.E.D. E-2                        |
|   | ㉑ 120 V OUTLET   |



**PLAN 1 FLOOR**

SCALE: 3/8"=1'-0"

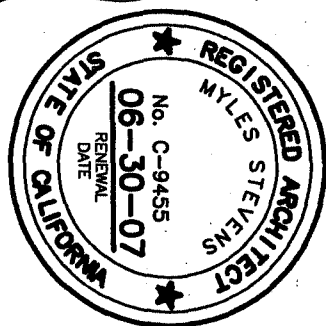


|  |   |                            |                 |
|--|---|----------------------------|-----------------|
| Drawing Title<br>GUARD HOUSE LAYOUT PLAN (A015)  | Status<br>CLARIFICATION # 1   | Scale<br>3/8"=1'-0"        | Date<br>8/10/06 |
| Project Information<br>PENITENCIA WTP LANDSCAPE<br>+ SITE IMPROVEMENT<br>PROJECT, SAN JOSE, CA | Client<br>Santa Clara Valley Water District<br>5750 ALMADEN EXPWY<br>SAN JOSE, CA 95118-3686<br>CONTACT: EDWARD DRURY, P.E. FAX: (408) 266-0271 | Project Number<br>93234037 | Sheet<br>LSK-06 |

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| MOUNTING <u>SURFACE</u>         |              | PANEL <u>PB-A</u>     |             |             |             |                  |             |             |  |                    |             | LOCATION <u>PRE FAB GUARD HOUSE</u>             |             |             |             |              |      |                         |  |
|---------------------------------|--------------|-----------------------|-------------|-------------|-------------|------------------|-------------|-------------|--|--------------------|-------------|---|-------------|-------------|-------------|--------------|------|-------------------------|--|
| VOLTAGE <u>120/240V</u>         |              | <u>10,000</u> AIC SYM |             |             |             |                  |             |             |  |                    |             | <u>125</u> AMP BUS <u>125A</u> MAIN <u>125A</u> |             |             |             |              |      |                         |  |
| LOCATION                        | VOLT-AMPERES |                       | L<br>T<br>G | R<br>E<br>C | M<br>I<br>S | P<br>O<br>L<br>E | B<br>K<br>R | C<br>I<br>R |  | C<br>I<br>R        | B<br>K<br>R | P<br>O<br>L<br>E                                | M<br>I<br>S | R<br>E<br>C | L<br>T<br>G | VOLT-AMPERES |      | LOCATION                |  |
|                                 | L1-Ø         | L2-Ø                  |             |             |             |                  |             |             |  |                    |             |   |             |             |             | L1-Ø         | L2-Ø |                         |  |
| SC AC OUTLET-I                  | 2500         |                       |             |             |             | 2                | 30          | 1           |  | 2                  | 20          | 1   |             |             |             | 600          |      | LIGHTING CONTROL PANEL  |  |
| WITH HEAT PUMP                  |              | 2500                  |             |             |             | -                | 30          | 3           |  | 4                  | 20          | 1   |             |             |             |              | 600  | LIGHTING CONTROL PANEL  |  |
| SC OUTLET - II                  | 2500         |                       |             |             |             | 2                | 30          | 5           |  | 6                  | 20          | 1   |             |             |             | 600          |      | LIGHTING CONTROL PANEL  |  |
| UNASSIGNED                      |              | 2500                  |             |             |             | -                | 30          | 7           |  | 8                  | 20          | 1   |             |             |             | 1500         |      | WEST GATE CONTROLLER    |  |
| IRRIGATION CONTROLLER           | 500W         |                       |             |             |             | 1                | 20          | 9           |  | 10                 | 20          | 1   |             |             |             |              | 1500 | SOUTH GATE CONTROLLER   |  |
| WIRE MOLD                       | 720          |                       |             |             |             | 1                | 20          | 11          |  | 12                 | 20          | 1   |             |             |             |              | 720  | WIRE MOLD               |  |
| WIRE MOLD                       |              | 720                   |             |             |             | 1                | 20          | 13          |  | 14                 | 20          | 1   |             |             |             | 720          |      | WIRE MOLD               |  |
| WIRE MOLD                       | 720          |                       |             |             |             | 1                | 20          | 15          |  | 16                 | 20          | 1   |             |             |             |              | 720  | WIRE MOLD               |  |
| EXT. FLUORESCENT                |              | 300                   |             |             |             | 1                | 20          | 17          |  | 18                 | 20          | 1   |             |             |             | 300          |      | CANOPY LIGHT            |  |
| SPARE                           |              |                       |             |             |             | 1                | 20          | 19          |  | 20                 | 20          | 1   |             |             |             |              | 300  | GATE CONTRL. (PEDESTR.) |  |
| SPARE                           |              |                       |             |             |             | 1                | 20          | 21          |  | 22                 | 20          | 1   |             |             |             | -            |      |                         |  |
| SPARE                           |              |                       |             |             |             | 1                | 20          | 23          |  | 24                 | 20          | 1   |             |             |             | -            |      |                         |  |
| VA PER PHASE                    |              | 6440                  | 6020        |             |             |                  |             |             |  |                    |             |   |             |             |             | 3750         | 3840 | VA PER PHASE            |  |
| CONTINUOUS LOAD - X 1.25 = - VA |              |                       |             |             |             |                  |             |             |  | TOTAL VA PER PHASE |             | 10190   | 9860        |             |             |              |      |                         |  |
| + OTHER = - VA                  |              |                       |             |             |             |                  |             |             |  | TOTAL CONNECTED VA |             | 20050   |             |             |             |              |      |                         |  |
| TOTAL LOAD = - VA = - AMPS      |              |                       |             |             |             |                  |             |             |  |                    |             |   |             |             |             |              |      |                         |  |



Drawing Title  
GENERAL NOTES & CONTROL DIAGRAMS (E-1)

Project Information

PENITENCIA WTP LANDSCAPE  
+ SITE IMPROVEMENT  
PROJECT, SAN JOSE, CA

Sheet

CLARIFICATION # 1

Scale

NTS

Date

8/10/06

Sheet

Project Number  
93234037

Sheet

LSK-07

**San Joaquin Water District**

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SAN JOSE, CA 95118-3686  
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TEL: (408) 286-2607 x 2426

855 SANSOME STREET, SECOND FLOOR

Fax: (415) 397-6525

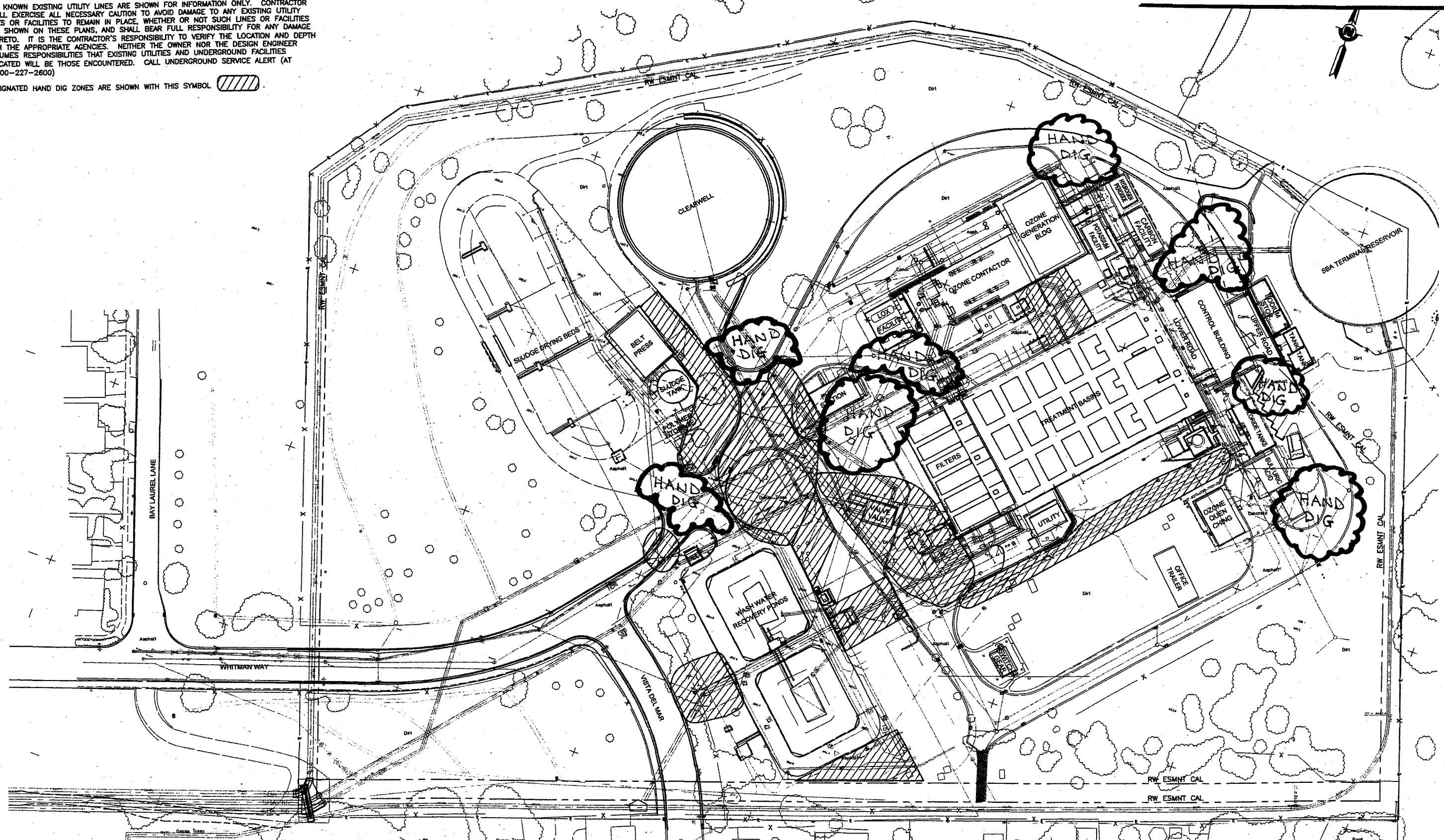
SAN FRANCISCO, CA 94111  
e-mail: stevens@iansel.com

STEVENS + ASSOCIATES  
Phone: (415) 397-6500

# GENERAL NOTES

- ALL KNOWN EXISTING UTILITY LINES ARE SHOWN FOR INFORMATION ONLY. CONTRACTOR SHALL EXERCISE ALL NECESSARY CAUTION TO AVOID DAMAGE TO ANY EXISTING UTILITY LINES OR FACILITIES TO REMAIN IN PLACE. WHETHER OR NOT SUCH LINES OR FACILITIES ARE SHOWN ON THESE PLANS, AND SHALL BEAR FULL RESPONSIBILITY FOR ANY DAMAGE THERETO. IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY THE LOCATION AND DEPTH WITH THE APPROPRIATE AGENCIES. NEITHER THE OWNER NOR THE DESIGN ENGINEER ASSUMES RESPONSIBILITIES THAT EXISTING UTILITIES AND UNDERGROUND FACILITIES INDICATED WILL BE THOSE ENCOUNTERED. CALL UNDERGROUND SERVICE ALERT (AT 1-800-227-2600)
- DESIGNATED HAND DIG ZONES ARE SHOWN WITH THIS SYMBOL

Attachment 1: Drawing L-1




DOCUMENT NUMBER: PWT-L-9323-29173


|     |             |      |       |  |   |  |   |   |   |  |
|-----|-------------|------|-------|--|---|--|---|---|---|--|
| REV | DESCRIPTION | DATE | APPR. | <br><b>STEVENS + ASSOCIATES</b><br>ARCHITECTURE + LANDSCAPE CONSULTANTS<br>855 SHOSHONE STREET, 2ND FLOOR<br>SAN FRANCISCO, CA 94111<br>Phone: (415) 387-6500 Fax: (415) 387-6525<br>e-mail: stevens@stevens.com | DATE<br>6/27/06<br>DESIGN<br>DH, WS<br>DRAWN<br>LK/MS<br>CHECKED<br>MS/ED | ENGINEERING CERTIFICATION<br><br>PROJECT ENGINEER MM-DD-YY | Santa Clara Valley Water District<br>ACCEPTED BY DISTRICT<br><br>PROJECT ENGINEER | PROJECT NAME AND SHEET DESCRIPTION:<br><b>PENITENCIA WTP LANDSCAPE<br/>         + SITE IMPROVEMENT PROJECT</b><br>EXISTING UTILITY PLAN | SCALE<br>1"=50'<br>VERIFY SCALES<br><br>BAR IS ONE INCH ON ORIGINAL. DRAWING IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY | PROJECT NUMBER<br>93234037<br>SHEET CODE:<br><b>L-1</b><br>PAGE NUMBER:<br>7 OF 67 |
|-----|-------------|------|-------|--|---|--|---|---|---|--|



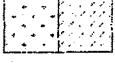
LAYOUT LEGEND:




(E) TREES / PLANTING TO REMAIN



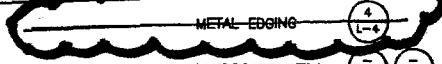
HEDGE / TALL SHRUBS




PLANTING AREA



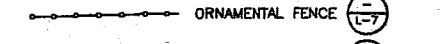
IN-FILL PLANTING AREA MAINTAIN FUNCTIONAL IRRIGATION SYSTEM DURING CONSTRUCTION SEE NOTE # 1



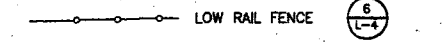
METAL EDGING



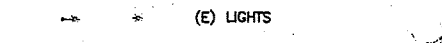
LANDSCAPE METAL SCREEN



ORNAMENTAL FENCE



LOW RAIL FENCE



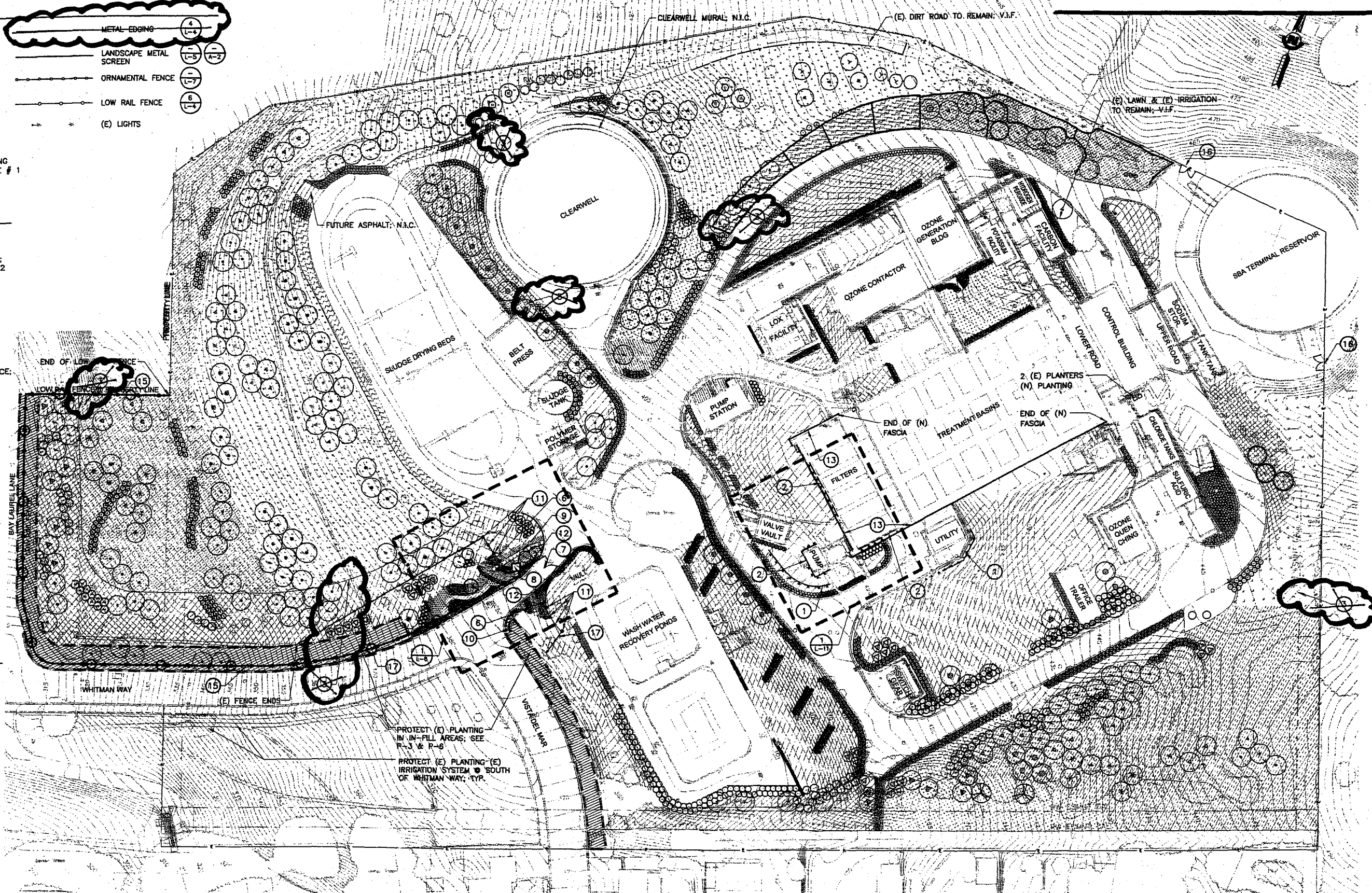
(E) LIGHTS

SHEET NOTES:

- 1 FREE STANDING LANDSCAPE METAL SCREEN; SEE DETAILS SHEET L-5
- 2 ATTACHED LANDSCAPE METAL SCREEN; SEE DETAILS SHEET A-4, A-11, A-12
- 3 METAL EDGING; SEE 4/L-4
- 4 DELETED
- 5 DELETED
- 6 ORNAMENTAL FENCE; SEE L-7 & L-8
- 7 VEHICULAR GATE @ ORNAMENTAL FENCE; SEE L-7 & L-8
- 8 GUARD HOUSE; SEE A-14 & A-15
- 9 CONCRETE WALKWAY; SEE 2/L-4
- 10 PLANT SIGN; NIC
- 11 CMU POST; SEE 1/L-8
- 12 CMU WALL; SEE L-7 & L-8
- 13 METAL FASCIA; SEE A-6 & A-7
- 14 PEDESTRIAN GATE @ ORNAMENTAL FENCE; SEE L-7 & L-8
- 15 LOW RAIL FENCE; SEE 6/L-4
- 16 FUTURE VEHICULAR GATE @ SECURITY FENCE; N.I.C.
- 17 CHAIN LINK FENCE; SEE 3/L-9, 5/L-9


NOTES

- 1. CONTRACTOR SHALL MAINTAIN FUNCTIONALITY OF (E) IRRIGATION SYSTEM OR PROVIDE TEMPORARY IRRIGATION SUPPLY FOR (E) TREES AND (E) PLANTING FOR THE IN-FILL-PLANTING AREAS DURING CONSTRUCTION, AND PROVIDE MAINTENANCE DURING PLANT ESTABLISHMENT. PLANT INDIVIDUAL AREAS SOUTH OF WHITMAN WAY.
- 2. ENGINEER TO PROVIDE AS-BUILTS OF EXISTING IRRIGATION SYSTEM.



DOCUMENT NUMBER: PWT-L-9323-29175

| REV | DESCRIPTION | DATE | APPR. |
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|     |             |      |       |



STEVENS + ASSOCIATES  
ARCHITECTURE + LANDSCAPE CONSULTANTS

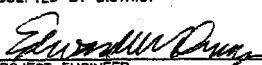
855 SHAWNEE STREET, 2ND FLOOR  
SAN FRANCISCO, CA 94111  
Phone (415) 397-4500 Fax (415) 397-4505  
e-mail: info@stevensassoc.com

DATE 6/27/06  
DESIGN  
GD  
DRAWN  
LK/MS  
CHECKED  
MS/ED

ENGINEERING CERTIFICATION  
REGISTERED ARCHITECT  
WILLES STEVENSON  
C-9455  
06-30-07  
RENEWAL DATE  
STATE OF CALIFORNIA

PROJECT ENGINEER MM-DD-YY

Santa Clara Valley Water District

ACCEPTED BY DISTRICT  
  
PROJECT ENGINEER

7/5/06  
DATE

PROJECT NAME AND SHEET DESCRIPTION:  
**PENITENCIA WTP LANDSCAPE + SITE IMPROVEMENT PROJECT**

LANDSCAPE LAYOUT PLAN

SCALE  
1"=50'

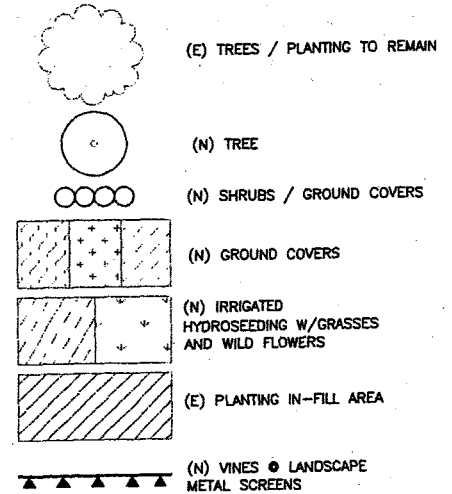
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BAR IS ONE INCH ON ORIGINAL DRAWING  
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

PROJECT NUMBER  
93234037

SHEET CODE:  
**L-3**

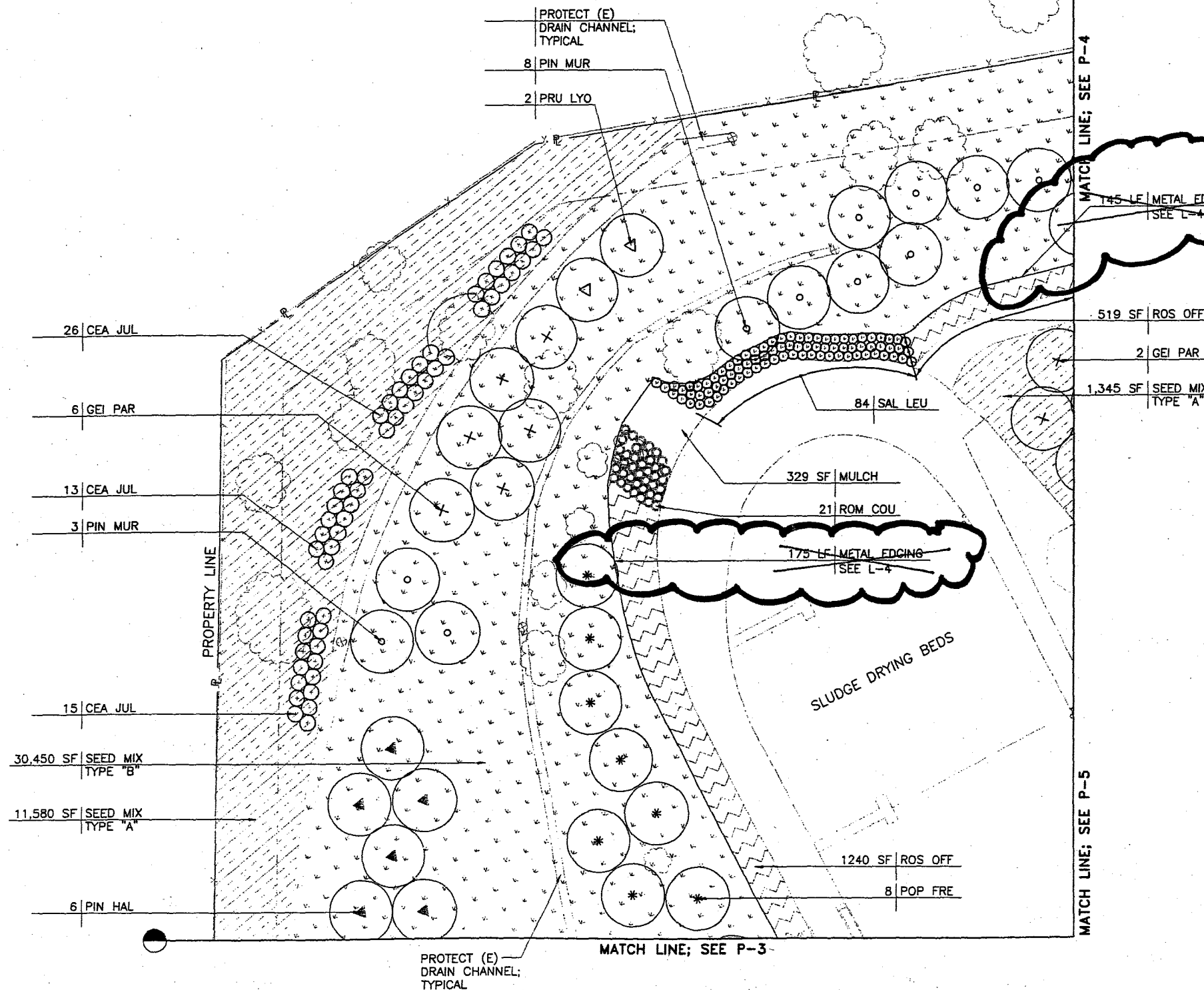
PAGE NUMBER:  
9 OF 67

## PLANTING LEGEND:



## PLANTING NOTES:

1. ALL SCALED DIMENSIONS ARE APPROXIMATE. BEFORE PROCEEDING WITH ANY WORK CAREFULLY CHECK AND VERIFY ALL DIMENSIONS AND QUANTITIES.
2. PROVIDE 3" LAYER OF WOOD BARK MULCH IN ALL GROUND COVERS AND SHRUB PLANTING AREAS.
3. SEE PLANTING DETAILS ON SHEET P-11.
4. CLEAR AND GRUB ALL AREAS TO RECEIVE NEW GROUND COVERS AND PREPARE SOIL PER SPECIFICATIONS SECTION 02900. SLOPE SOIL AWAY FROM BUILDING AT 2% MINIMUM.
5. SPACE GROUND COVER TRIANGULAR IN ALL PLANTING AREAS. PLANTING KEY INDICATIONS ARE SHOWN IN PLANT MATERIAL MATRIX SHEET P-1. HOLD GROUND COVER BACK 18 INCHES FROM THE EDGE OF NEW SHRUB PLANTS UNLESS NOTED OTHERWISE. PLANT GROUND COVER WHERE SHRUBS ARE PLANTED 2 1/2 FEET APART OR MORE.



DOCUMENT NUMBER: PWT-P-9323-29200

| REV | DESCRIPTION | DATE | APPR. |
|-----|-------------|------|-------|
|     |             |      |       |

**STEVENS + ASSOCIATES**  
 ARCHITECTURE + LANDSCAPE CONSULTING  
 855 SHAWNEE STREET, 3RD FLOOR  
 SAN FRANCISCO, CA 94111  
 Phone: (415) 397-4500 Fax: (415) 397-4505  
 e-mail: stevens@stevens.com

DATE  
 6/27/06  
 DESIGN  
 GD  
 DRAWN  
 LK/MS  
 CHECKED  
 MS/ED

ENGINEERING CERTIFICATION  
 REGISTERED ARCHITECT  
 No. C-9455  
 06-30-07  
 EXPIRATION DATE  
 STATE OF CALIFORNIA  
 PROJECT ENGINEER MM-DD-YY

Santa Clara Valley Water District  
 ACCEPTED BY DISTRICT  
 PROJECT ENGINEER  
 DATE 7/5/06

PROJECT NAME AND SHEET DESCRIPTION:

**PENITENCIA WTP LANDSCAPE  
 + SITE IMPROVEMENT PROJECT**

PLANTING PLAN

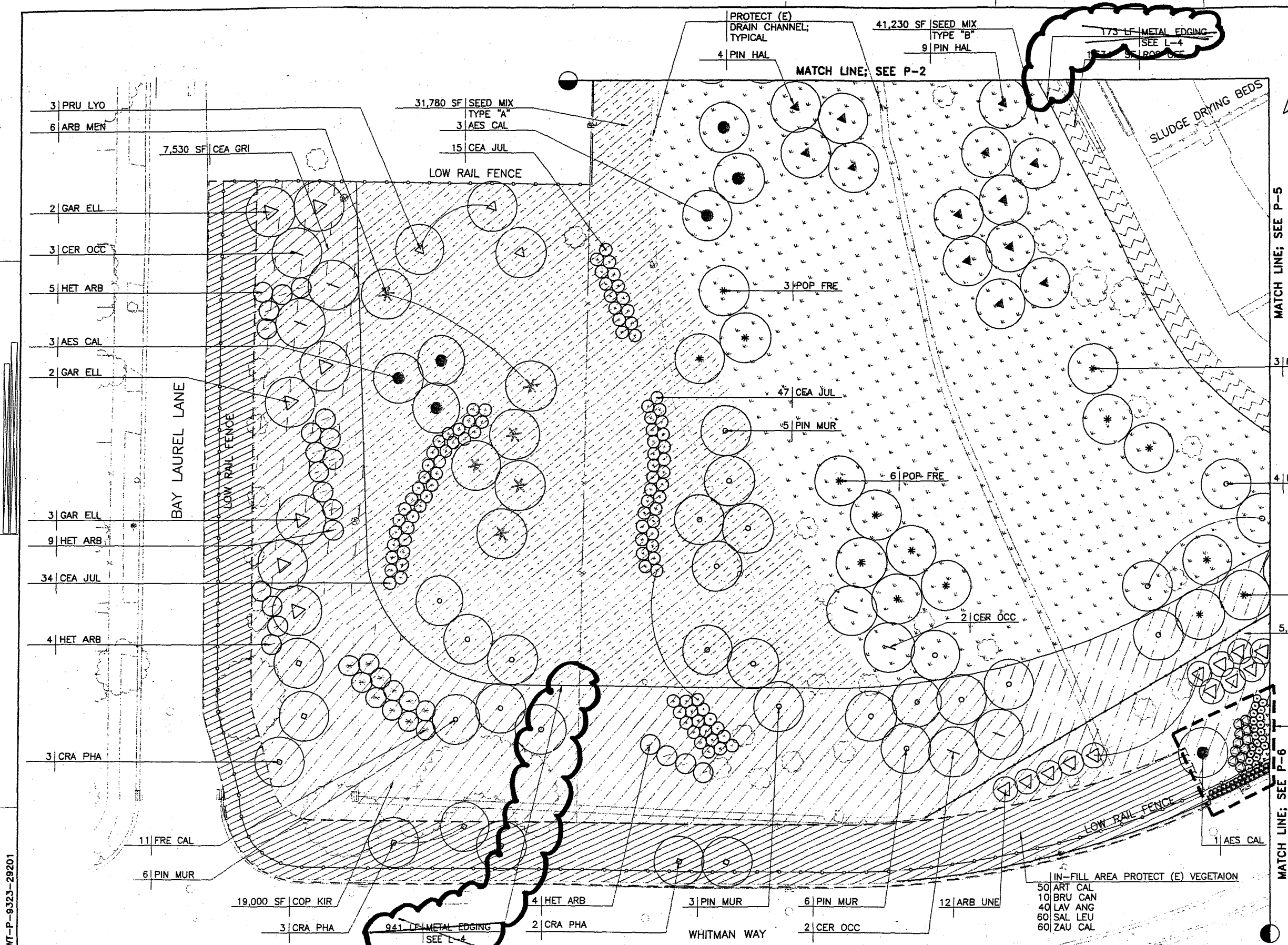
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 VERIFY SCALES  
 0 1'  
 BAR IS ONE INCH ON ORIGINAL DRAWING IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY  
 PROJECT NUMBER  
 93234037  
 SHEET CODE:  
**P-2**  
 PAGE NUMBER:  
 34 OF 67

PLANTING LEGEND:

- (E) TREES / PLANTING TO REMAIN
- (N) TREE
- (N) SHRUBS / GROUND COVERS
- (N) GROUND COVERS
- (N) IRRIGATED HYDROSEEDING W/GRASSES AND WILD FLOWERS
- (E) PLANTING IN-FILL AREA
- (N) VINES • LANDSCAPE METAL SCREENS

PLANTING NOTES:

- ALL SCALED DIMENSIONS ARE APPROXIMATE. BEFORE PROCEEDING WITH ANY WORK CAREFULLY CHECK AND VERIFY ALL DIMENSIONS AND QUANTITIES.
- PROVIDE 3" LAYER OF WOOD BARK MULCH IN ALL GROUND COVERS AND SHRUB PLANTING AREAS.
- SEE PLANTING DETAILS ON SHEET P-11.
- CLEAR AND GRUB ALL AREAS TO RECEIVE NEW GROUND COVERS AND PREPARE SOIL PER SPECIFICATIONS SECTION 02900. SLOPE SOIL AWAY FROM BUILDING AT 2% MINIMUM.
- SPACE GROUND COVER TRIANGULAR IN ALL PLANTING AREAS. PLANTING KEY INDICATIONS ARE SHOWN IN PLANT MATERIAL MATRIX SHEET P-1. HOLD GROUND COVER BACK 18 INCHES FROM THE EDGE OF NEW SHRUB PLANTS UNLESS NOTED OTHERWISE. PLANT GROUND COVER WHERE SHRUBS ARE PLANTED 2 1/2 FEET APART OR MORE.



DOCUMENT NUMBER: PWT-P-9323-29201

| REV | DESCRIPTION | DATE | APPR. |
|-----|-------------|------|-------|
|     |             |      |       |

**STEVENS + ASSOCIATES**  
ARCHITECTURE + LANDSCAPE CONSULTANTS  
855 SHOSHONE STREET, 2ND FLOOR  
SAN FRANCISCO, CA 94111  
Phone: (415) 397-4000 Fax: (415) 397-6025  
www.stevensassoc.com

DATE: 6/27/06  
DESIGN: GD  
DRAWN: LK/MS  
CHECKED: MS/ED  
PROJECT ENGINEER: MM-DO-VY

**Santa Clara Valley Water District**

ACCEPTED BY DISTRICT

*Robert M. Chung* 7/5/06  
PROJECT ENGINEER

PROJECT NAME AND SHEET DESCRIPTION:

**PENITENCIA WTP LANDSCAPE + SITE IMPROVEMENT PROJECT**

PLANTING PLAN

SCALE: 1"=20'

VERIFY SCALES: 1"

BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

PROJECT NUMBER: 93234037

SHEET CODE: P-3

PAGE NUMBER: 35 OF 67

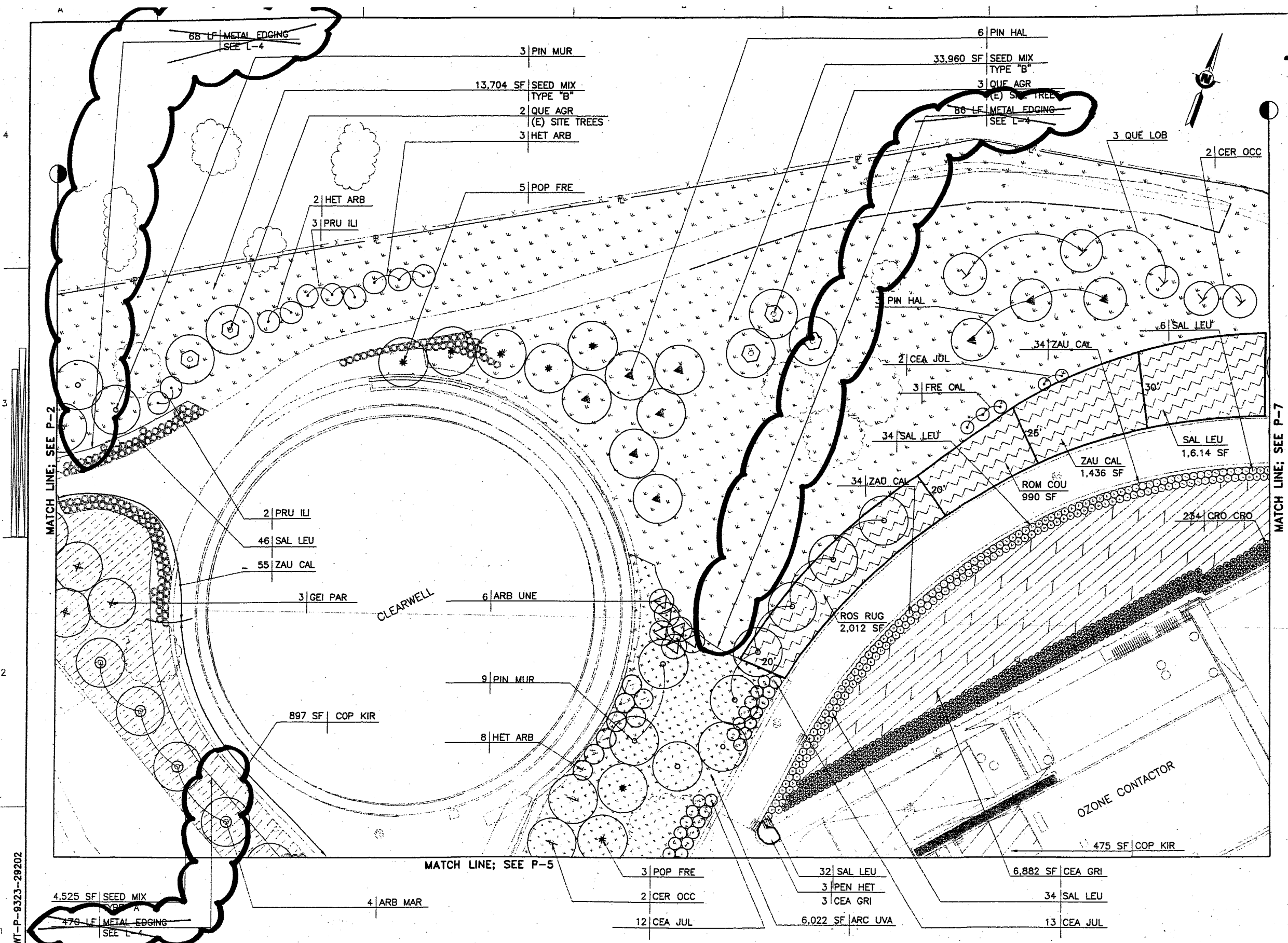


PLANTING LEGEND:

- (E) TREES / PLANTING TO REMAIN
- (N) TREE
- (N) SHRUBS / GROUND COVERS
- (N) GROUND COVERS
- (N) IRRIGATED HYDROSEEDING W/GRASSES AND WILD FLOWERS
- (E) PLANTING IN-FILL AREA
- (N) VINES @ LANDSCAPE METAL SCREENS

PLANTING NOTES:

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- PROVIDE 3" LAYER OF WOOD BARK MULCH IN ALL GROUND COVERS AND SHRUB PLANTING AREAS.
- SEE PLANTING DETAILS ON SHEET P-11.
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- SPACE GROUND COVER TRIANGULAR IN ALL PLANTING AREAS. PLANTING KEY INDICATIONS ARE SHOWN IN PLANT MATERIAL MATRIX SHEET P-1. HOLD GROUND COVER BACK 18 INCHES FROM THE EDGE OF NEW SHRUB PLANTS UNLESS NOTED OTHERWISE. PLANT GROUND COVER WHERE SHRUBS ARE PLANTED 2 1/2 FEET APART OR MORE.



CURRENT NUMBER: PWT-P-9323-29202

| REV | DESCRIPTION | DATE | APPR. |
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**STEVENS + ASSOCIATES**  
ARCHITECTURE + LANDSCAPE CONSULTANTS  
855 SHADOWN STREET, 2ND FLOOR  
SAN FRANCISCO, CA 94111  
Phone: (415) 397-8200 Fax: (415) 397-8205  
e-mail: stevens@stevens.com

DATE: 6/27/06  
DESIGN: GD  
DRAWN: LK/MS  
CHECKED: MS/ED  
ENGINEERING CERTIFICATION  
REGISTERED ARCHITECT  
No. C-9455  
06-30-07  
RENEWAL DATE  
STATE OF CALIFORNIA  
PROJECT ENGINEER MM-DD-YY

Santa Clara Valley Water District  
ACCEPTED BY DISTRICT  
Project Engineer  
7/5/06  
DATE

PROJECT NAME AND SHEET DESCRIPTION:  
**PENITENCIA WTP LANDSCAPE + SITE IMPROVEMENT PROJECT**  
PLANTING PLAN

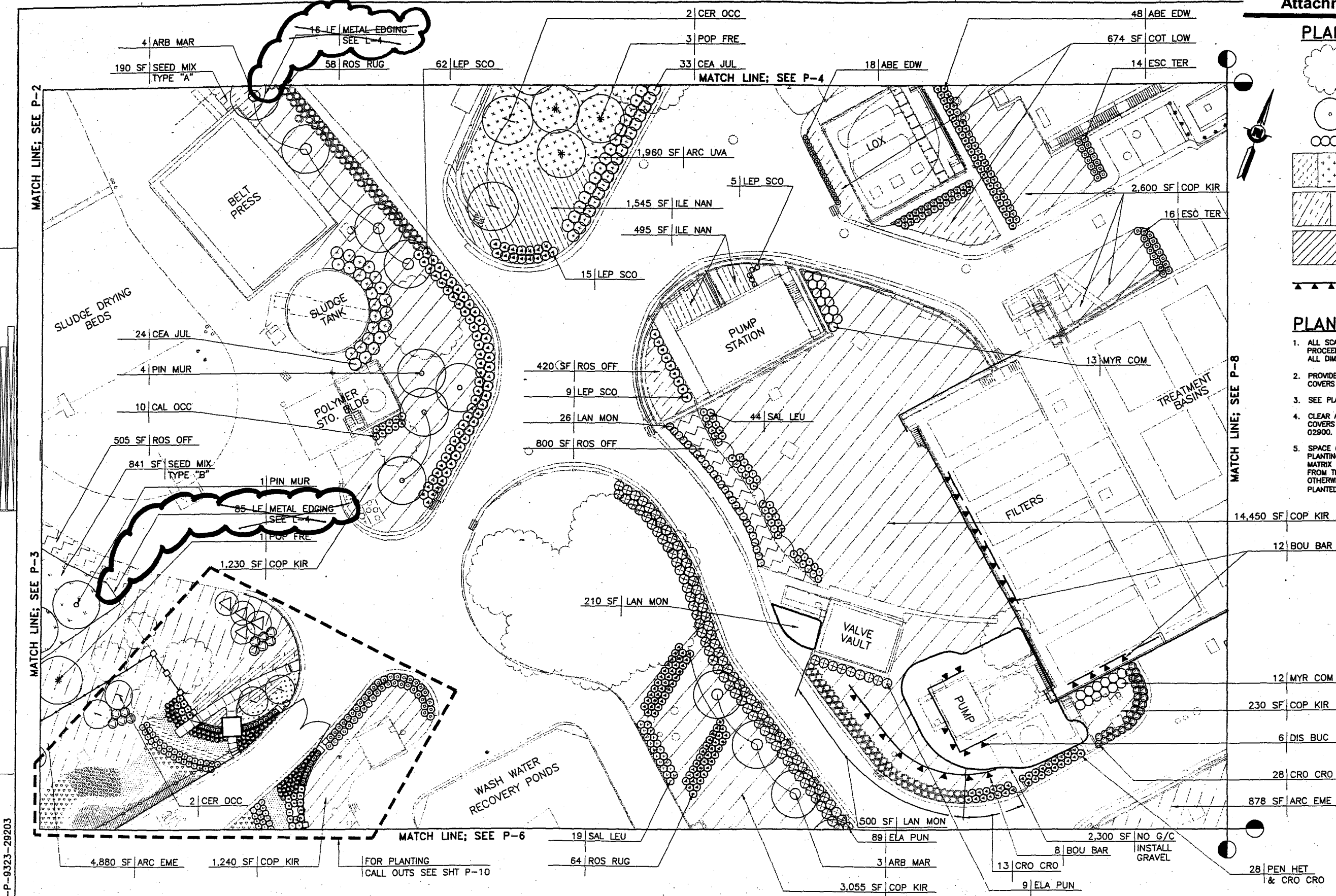
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PROJECT NUMBER: 93234037  
SHEET CODE: P-4  
PAGE NUMBER: 36 OF 67

PLANTING LEGEND:

- (E) TREES / PLANTING TO REMAIN
- (N) TREE
- (N) SHRUBS / GROUND COVERS
- (N) GROUND COVERS
- (N) IRRIGATED HYDROSEEDING W/GRASSES AND WILD FLOWERS
- (E) PLANTING IN-FILL AREA
- (N) VINES • LANDSCAPE METAL SCREENS

PLANTING NOTES:

- ALL SCALED DIMENSIONS ARE APPROXIMATE. BEFORE PROCEEDING WITH ANY WORK CAREFULLY CHECK AND VERIFY ALL DIMENSIONS AND QUANTITIES.
- PROVIDE 3" LAYER OF WOOD BARK MULCH IN ALL GROUND COVERS AND SHRUB PLANTING AREAS.
- SEE PLANTING DETAILS ON SHEET P-11.
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DOCUMENT NUMBER: PWT-P-9323-29203

| REV | DESCRIPTION | DATE | APPR. |
|-----|-------------|------|-------|
|     |             |      |       |

STEVENS + ASSOCIATES  
ARCHITECTURE + LANDSCAPE CONSULTANTS  
855 SHAWNEE STREET, 2ND FLOOR  
SAN FRANCISCO, CA 94111  
Phone (415) 397-8500 Fax (415) 397-8505  
e-mail: stevens@stevens.com

|                  |                           |
|------------------|---------------------------|
| DATE<br>6/27/06  | ENGINEERING CERTIFICATION |
| DESIGN<br>GD     |                           |
| DRAWN<br>LK/MS   |                           |
| CHECKED<br>MS/ED |                           |
| PROJECT ENGINEER |                           |

Santa Clara Valley Water District

ACCEPTED BY DISTRICT

*[Signature]* 7/5/06

PROJECT ENGINEER DATE

PROJECT NAME AND SHEET DESCRIPTION:

**PENITENCIA WTP LANDSCAPE + SITE IMPROVEMENT PROJECT**

PLANTING PLAN

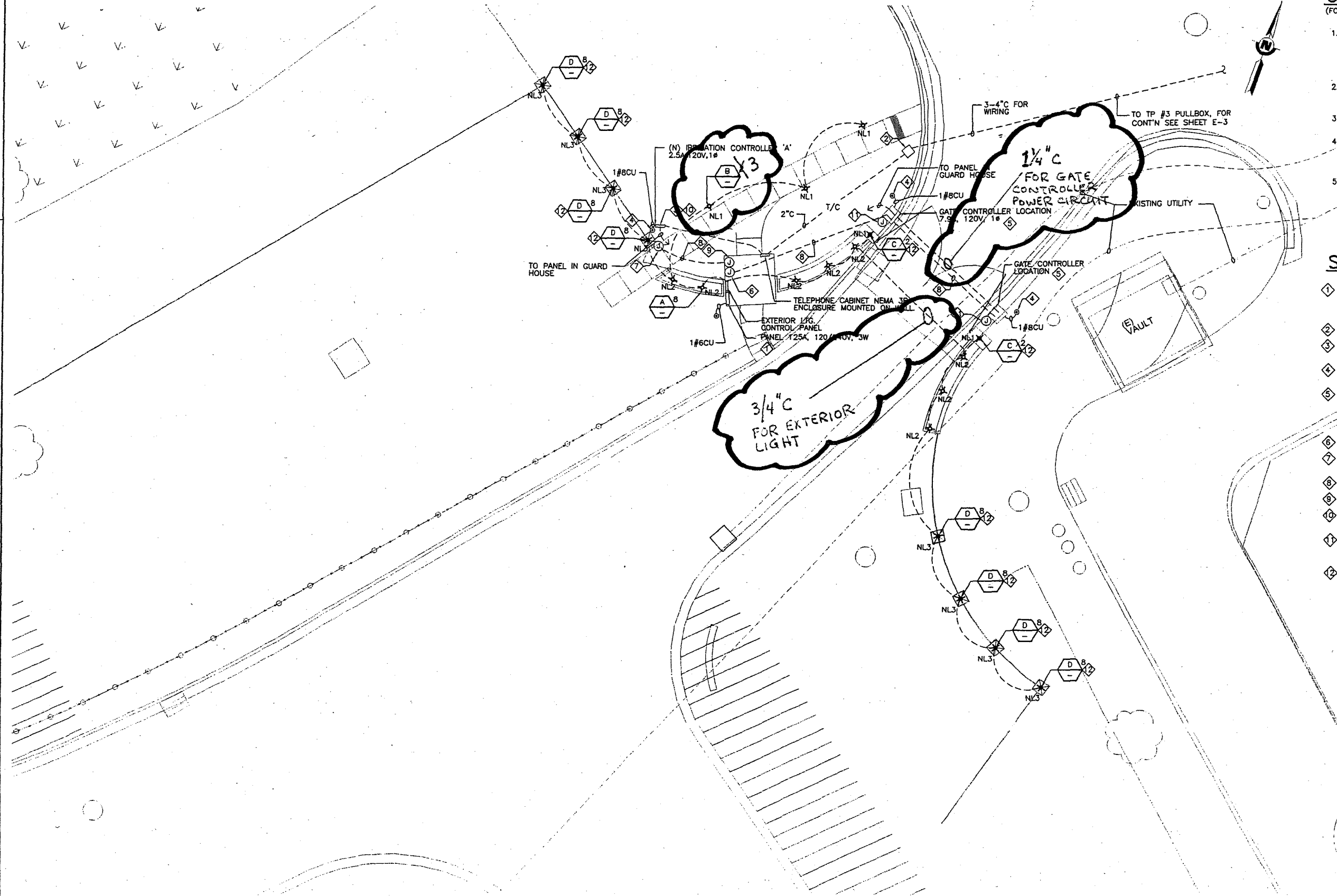
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|   | PAGE NUMBER:<br>37 OF 67   |

GENERAL NOTES:  
(FOR THIS SHEET ONLY)

- 1. INFORMATION SHOWN HAS BEEN TAKEN FROM LANDSCAPE PLAN L-1 AND LIMITED SITE VISIT ONLY. ANY DISCREPANCY TO ACTUAL CIRCUITRY AND CONNECTION OF EQUIPMENT SHALL BE REPORTED TO THE ARCHITECT FOR CORRECTIONS AT NO ADDITIONAL COST TO DISTRICT.
- 2. CONTRACTOR SHALL VERIFY EXISTING UNDERGROUND UTILITIES, TO AVOID THE CONFLICT WITH THE NEW LAYOUT SHOWN ON ELECTRICAL PLAN E-2 AND E-3.
- 3. ENGINEER SHALL APPROVE ALL LAYOUT IN THE FIELD PRIOR TO CONSTRUCTION.
- 4. POWER OUTAGES SHALL BE KEPT TO A MINIMUM ONLY. SUBMIT SCHEDULES TO ENGINEER FOR APPROVAL. PROVIDE TEMPORARY POWER AS REQUIRED TO MAINTAIN POWER SUPPLY OF ALL (E) COMMUNICATION AND LIFE SAFETY EQUIPMENTS.
- 5. ALL SALVAGE MATERIALS SHALL BE CLEANED AND STORED IN PROPER PLACE. SALVAGE MATERIAL SHALL BE COORDINATED WITH ARCHITECT AND TURNED OVER TO DISTRICT.

SHEET NOTES:

- 1. CONNECT THE PRE-FAB GUARD HOUSE PANEL SUPPLIED BY GUARD HOUSE MANUFACTURER TO THE EXISTING SUPPLY. COORDINATE ENGINEER FOR MINIMUM OUTAGE TO REROUTE THE EXISTING GUARD SUPPLY.
- 2. NEW TELEPHONE / CONTROL UNDERGROUND PULLBOX #3A.
- 3. NEW IRRIGATION CONTROLLER 'A' WITH RJ-11 PHONE JACK AS SPECIFIED IN IRRIGATION PLAN I-1.
- 4. 5/8"x8. MINIMUM COPPER GROUND ROD FOR NEW IRRIGATION CONTROLLER 'A', GATE CONTROLLER AND (N) GUARD HOUSE PAN.
- 5. PROVIDE POWER CONNECTION FOR GATE CONTROLLER. REFER GATE CONTROLLER SPECIFICATIONS AND COORDINATE WITH GATE CONTROLLER MANUFACTURER AND ENGINEER TO INCLUDE ALL SAFETY AND EMERGENCY DEVICES AND WIRING REQUIRED FOR THE SAFE GATE OPERATION.
- 6. JUNCTION BOX FOR GATE CONTROLLER.
- 7. NEMA TYPE 4 JUNCTION BOX FOR LOCAL AND REMOTE GATE CONTROLLER.
- 8. 1" C FOR CONTROL WIRING.
- 9. JUNCTION BOX FOR OVERRIDE CONTROL.
- 10. SEE IRRIGATION PLAN I-5 FOR EXACT LOCATION OF THE CONTROLLER.
- 11. PROVIDE SEPARATE NEMA TYPE 4 JUNCTION BOX FOR POWER DISCONNECT, DISTRIBUTION, ELECTRIC CONTROL AND DUAL SYSTEM OF GATE CONTROLLER.
- 12. PROVIDE NEMA TYPE 4 JUNCTION BOX TO RAISE THE MOUNTING HEIGHT OF FIXTURE BY 4".



PWT-E-9323-29232

| REV | DESCRIPTION | DATE | APPR. |
|-----|-------------|------|-------|
|     |             |      |       |

**STEVENS + ASSOCIATES**  
ARCHITECTURE + LANDSCAPE CONSULTANTS  
855 SHAWNEE STREET, 2ND FLOOR  
SAN FRANCISCO, CA 94111  
Phone: (415) 397-8500 Fax: (415) 397-8525  
e-mail: stevens@stevens.com

**T M A D  
TAYLOR & GAINES**  
311 California Street Suite 700  
San Francisco, California 94104  
Phone: 415.296.0100 Fax: 415.296.0101  
Project No.

|                 |
|-----------------|
| DATE<br>4-10-06 |
| DESIGN<br>V.J.  |
| DRAWN<br>V.J.   |
| CHECKED<br>O.H. |

ENGINEERING CERTIFICATION

Professional Engineer  
T.M.A.D. Taylor & Gaines  
State of California  
License No. 41464

Santa Clara Valley Water District

ACCEPTED BY DISTRICT

PROJECT ENGINEER

7/5/06

DATE

PROJECT NAME AND SHEET DESCRIPTION:

**PENITENCIA WTP LANDSCAPE  
+ SITE IMPROVEMENT PROJECT**

PARTIAL SITE PLAN - ELECTRICAL

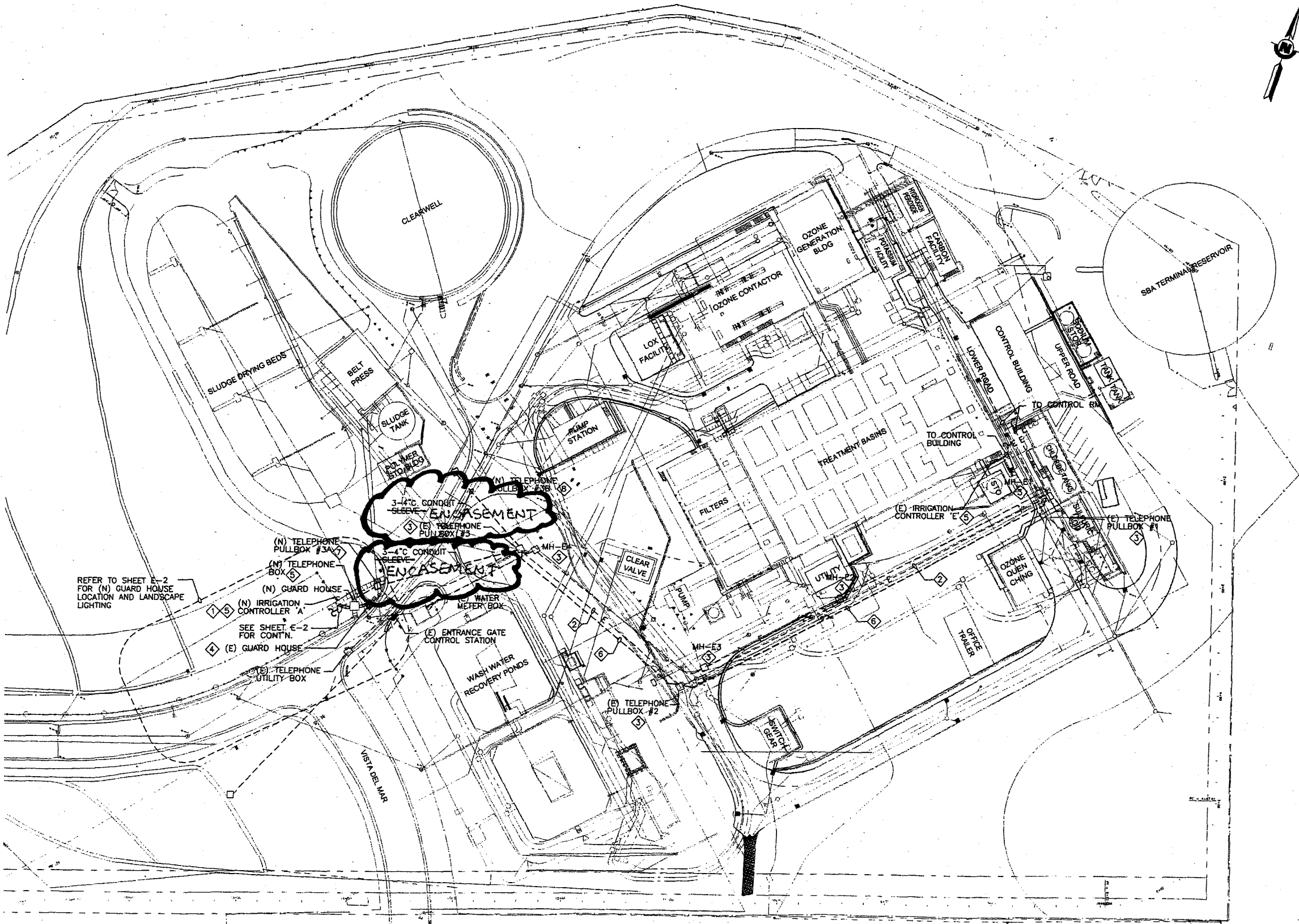
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|  | PAGE NUMBER:<br>66 OF 67   |

GENERAL NOTES:  
(FOR THIS SHEET ONLY)


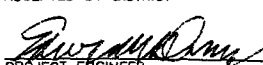

- 1. INFORMATION SHOWN HAS BEEN TAKEN FROM LANDSCAPE PLAN L-1 AND LIMITED SITE VISIT ONLY. ANY DISCREPANCY TO ACTUAL CIRCUITRY AND CONNECTION OF EQUIPMENT SHALL BE REPORTED TO THE ARCHITECT FOR CORRECTIONS AT NO ADDITIONAL COST TO DISTRICT.
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- 4. POWER OUTAGES SHALL BE KEPT TO A MINIMUM ONLY. SUBMIT SCHEDULES TO ENGINEER FOR APPROVAL PROVIDE TEMPORARY POWER AS REQUIRED TO MAINTAIN POWER SUPPLY OF ALL (E) COMMUNICATION AND LIFE SAFETY EQUIPMENTS.
- 5. ALL SALVAGE MATERIALS SHALL BE CLEANED AND STORE IN PROPER PLACE. SALVAGE MATERIAL SHALL BE COORDINATED WITH ARCHITECT AND TURNED OVER TO DISTRICT.

SHEET NOTES:

- 1 REFER TO IRRIGATION PLAN I-5 FOR NEW IRRIGATION CONTROLLER LOCATION.
- 2 (E) TELEPHONE CABLES TO REMAIN.
- 3 (E) PULLBOX TO FIELD VERIFY EXACT LOCATION.
- 4 (E) POWER SUPPLY TO BE RE-USED FOR APD HOUSE.
- 5 PROVIDE NEW TELEPHONE LINE CONNECTION FROM CONTROL BUILDING TO EXISTING IRRIGATION CONTROLLER 'E', NEW IRRIGATION CONTROLLER 'A' AND NEW GUARD HOUSE TELEPHONE.
- 6 PROVIDE AND INSTALL 6-4" C FOR TEL/CONTROL/SECURITY CABLES.
- 7 (N) CHRISTY N48T2 TELEPHONE PULL BOX # 3A TO ACCESS GATE.
- 8 (N) CHRISTY N48T2 TELEPHONE PULL BOX # 3B TO ACCESS BELT PRESS BUILDING.



PWT-E-9323-29233

| REV | DESCRIPTION | DATE | APPR. | STEVENS + ASSOCIATES<br>ARCHITECTURE + LANDSCAPE CONSULTANTS<br>855 SHOSHONE STREET, 2ND FLOOR<br>SAN FRANCISCO, CA 94111<br>Phone (415) 397-4500 Fax (415) 397-6525<br>e-mail: stevens@stevens.com | T M A D<br>TAYLOR & GAINES<br>311 California Street, Suite 700<br>San Francisco, California 94104<br>Phone 415.296.0100 Fax 415.296.0101<br>Project No. | DATE<br>4-10-06<br>DESIGN<br>V.J.<br>DRAWN<br>V.J.<br>CHECKED<br>O.H. | ENGINEERING CERTIFICATION<br><br>PROJECT ENGINEER MM-DD-YY | Santa Clara Valley Water District<br>ACCEPTED BY DISTRICT<br><br>PROJECT ENGINEER | PROJECT NAME AND SHEET DESCRIPTION:<br><b>PENITENCIA WTP LANDSCAPE<br/>+ SITE IMPROVEMENT PROJECT</b> | SCALE<br>1"=50'<br>VERIFY SCALES<br><br>BAR IS ONE INCH ON ORIGINAL DRAWING IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY | PROJECT NUMBER<br>93234037<br>SHEET CODE:<br><b>E-3</b><br>PAGE NUMBER:<br>67 OF 67 |
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|-----|-------------|------|-------|---|---|---|---|--|---|---|---|

SITE PLAN

## **Penitencia Water Treatment Plant Landscaping and Site Improvement**

Project No. 93234037  
Contract No. C0526

### **Notice to Prospective Bidders And Bid Documents**

**Bid Opening: August 23, 2006**



## TABLE OF CONTENTS

### Notice to Prospective Bidders

#### Documents to be submitted at time of Bid Opening

- Proposal Form
- Listing of Bid Items (Attachment A)
- Noncollusion Affidavit
- Bidders Bond

#### Documents to be submitted within 2 days after Bid Opening

- Bidders General Information
- Enclosure A: Resume of Person Designated as Authorized Representative
- Enclosure B: Prior Construction Contracts
- Small Business Outreach Program Contract Compliance Requirements

Attachment 1 (Signatures)  
Attachment 2 (Affidavit)  
Attachment 3 (Good Faith Effort)

#### For Information Only

Resolution No. 88-11

SANTA CLARA VALLEY WATER DISTRICT  
**NOTICE TO PROSPECTIVE BIDDERS**

Notice is hereby given that sealed proposals will be received by the Construction Support Unit of the Santa Clara Valley Water District, Room B108, of the District's Administration Building, 5750 Almaden Expressway, San Jose, California, up to 2 p.m. on August 23, 2006.

Work of this Contract consists of furnishing all labor, equipment and materials necessary to construct the Landscaping and Site Improvements at the Penitencia Water Treatment Plant in San Jose, California, including: approximately 12 acres of landscaping, an irrigation system, constructing earthwork, drainage, walkways, a main entrance gate, ornamental CMU walls, a Security Guard House, landscape metal screens, Fascia Panels, electrical work, and ancillary work in accordance with the terms and conditions of the specifications herein. There is a one year plant establishment period following the construction.

A pre-bid conference/site showing will be conducted by the District on August 2, 2006. The pre-bid conference will convene at 10 a.m. at the District's Penitencia Water Treatment Plant located at 3959 Whitman Way, San Jose, California. Attendance at the pre-bid conference/site showing is strongly recommended but not mandatory. Following the pre-bid conference will be an opportunity to visit the site. No additional site visits will be allowed. The objective of the site showing is to acquaint prospective bidders with the site. A driver's license or valid photo identification is required to enter the site. Prospective bidders shall schedule an appointment to attend the pre-bid conference and site showing with the Construction Support Unit Plan Room at (408) 265-2607, extension 3780. The District has elected to implement the small business preference provisions of California Public Contracts Code Section 2002(a)(1). A small business as defined in Government Code Section 14837 shall receive a preference of 5 percent of the lowest responsible bidder meeting specifications. The prebid meeting will begin with a District presentation on the Small Business Outreach Program.

Reasonable efforts will be made to accommodate persons with disabilities wishing to attend this pre-bid conference/site showing. Those persons requiring special accommodations due to disabilities shall indicate special accommodations needed at the time of making reservations.

Unless otherwise noted, no oral questions will be taken during the bidding period (including pre-bid conference/site showing) regarding the Drawings and Specifications. Written questions shall be in accordance with Article 3.04 of the specifications. Written questions should be directed to Edward M. Drury, Santa Clara Valley Water District, 5750 Almaden Expressway, San Jose, California 95118 or via e-mail at [edrury@valleywater.org](mailto:edrury@valleywater.org). All questions shall be submitted in writing prior to August 14, 2006. For questions regarding the advertisement process, contact the Construction Support Unit Plan Room at (408) 265-2607, extension 3780.

Said Proposals will be opened by the Construction Support Unit at the time and place above stated, and a report of the names of all bidders and the amount of each Proposal will be made to the District Board of Directors at a regular or special meeting of said Board following the date of opening of said Proposals.

Workers employed in said work must be paid at rates at least equal to the prevailing wage rates as determined by the Director of the Department of Industrial Relations pursuant to Section 1770 of the Labor Code. Said wage rates are made a part of the Contract documents for the work to be performed and each bidder, at the bidder's option, may obtain copies of the wage rates from the Construction Support Unit.

Prospective Bidders are advised that any contractor who is awarded a public works project and intends to use a craft or classification not shown on the general prevailing wage determinations, may be required to pay the wage rate of that craft or classification most closely related to it as shown in the general determinations effective at the time of the call for bids.

Each Proposal must be accompanied by cash, a certified or cashier's check, or a bidder's bond in the sum of not less than 10 percent of the total aggregate of the Proposal. Said checks or bonds shall be made payable to the order of the Santa Clara Valley Water District, as liquidated damages in case the successful bidder fails to file satisfactory bonds as required by the Contract documents or fails or refuses to enter into a contract within the specified time.

All Proposals shall be made in sealed envelopes addressed to the Construction Support Unit of the Santa Clara Valley Water District, and shall bear the title or name of the work to be constructed on the outside of the sealed envelope. Each bid must be submitted on the prescribed form. All spaces for requiring bid prices must be filled in in ink.

The District Board of Directors reserves the right to reject any and all Proposals. The District Board of Directors also reserves the right, but is not required, to waive defects or irregularities in the Proposal.

The District is an equal opportunity employer and all contractors of District projects are to have and follow a policy of equal opportunity including adherence to all state and federal laws and regulations, including the Federal Equal Opportunity Clause.

The District has established a Small Business Outreach Program, which provides a 5 percent preference for qualified small businesses, including micro businesses.

Time limit for the completion of the work is 260 calendar days plus a one year plant establishment period, a total of 625 calendar days. Drawings and Specifications may be secured in person from the Construction Support Unit Plan Room, Santa Clara Valley Water District, 160 Great Oaks Boulevard, San Jose, California, (408) 265-2607, extension 3780, for the **nonrefundable** price of \$30 per set. Prospective Bidders requesting sets to be sent to them must remit an additional \$10 per set for packaging and postage or delivery. Prospective Bidders requesting sets by mail should send their request to Construction Support Unit, Santa Clara Valley Water District, 5750 Almaden Expressway, San Jose, California 95118. (Please note that due to security measures currently in effect, requests sent by any method other than the U. S. Postal Service [e.g., Federal Express, UPS, etc.] should be sent Attention: Construction Support Unit, Santa Clara Valley Water District, 5905 Winfield Boulevard, San Jose, California 95123-2428.)

For any monies earned by the Contractor and withheld by District to ensure the performance of the contract, the Contractor may, at the Contractor's request and expense substitute securities equivalent to the amount withheld in the form and manner and subject to the conditions provided in Section 22300 of the Public Contract Code of the State of California.

The estimated cost of the project is between \$2,100,000 and \$2,800,000. This estimate is intended to serve merely as a guide of the magnitude of the work. Neither the bidders nor the Contractor shall be entitled to claims because of any inaccuracy in the estimated cost range.

The classification of the contractor's license which a Contractor shall possess to perform this Contract shall be General Engineering Contract (Class A) with a subcontractor licensed to perform landscape construction.

The Prospective Bidder's attention is directed to:

1. Section 7058.5 of the California Business and Professions Code which states that from and after January 1, 1987 no Contractor shall engage in asbestos-related work, as defined, who is not certified by the Contractor's State License Board to do so.
2. Section 6501.5, and following, of the California Labor Code relative to asbestos-related work and to provisions of the General Industry Safety Orders of Title 8 of the California Administrative Code.
3. District Resolution No. 88-11 and Bidder's General Information, copies of which are provided in the Bid documents with the Plans and Specifications.
4. District Small Business Outreach Program Contract Compliance Requirements.

By order of the Board of Directors of the Santa Clara Valley Water District, San Jose, California, on July 11, 2006.

ATTEST: LAUREN L. KELLER

  
Clerk/Board of Directors

SANTA CLARA VALLEY WATER DISTRICT

**PROPOSAL FORM**

Honorable Board of Directors  
Santa Clara Valley Water District  
5750 Almaden Expressway  
San Jose, California 95118

The undersigned, as Bidder, or the duly authorized representative of the Bidder, having duly executed the Noncollusion Affidavit submitted hereto and having carefully examined the Drawings and Specifications and read the instructions set forth in the Notice to Prospective Bidders calling for Proposals for the construction of Penitencia Water Treatment Plant Landscaping and Site Improvement Project, all within the boundaries of the Santa Clara Valley Water District, declare that the only persons or parties interested in this proposal as principals are those named herein; that I have carefully examined the location of the proposed work, the annexed proposed form of contract, and the plans therein referred to; and I propose and agree that if this proposal is accepted, that I will contract with the District, in the form of the copy of the contract annexed hereto, to provide all necessary machinery, tools, apparatus and other means of construction, and to do all work and furnish all the materials specified in the contract, in a manner and time therein prescribed, and according to the requirements of the Engineer as therein set forth, and that I will take in full payment therefor:

TOTAL BID: (\$ \_\_\_\_\_)

Bid items are listed and attached to this form as "Attachment A," the summary of which represents the total bid shown above.

The receipt of the following Addenda and/or letters of clarification is acknowledged:

**Addenda**

- |                |           |
|----------------|-----------|
| 1. Dated _____ | No. _____ |
| 2. Dated _____ | No. _____ |
| 3. Dated _____ | No. _____ |
| 4. Dated _____ | No. _____ |

**Letters of Clarification**

- |                |
|----------------|
| 1. Dated _____ |
| 2. Dated _____ |
| 3. Dated _____ |
| 4. Dated _____ |

## DESIGNATION OF SUBCONTRACTORS

In compliance with the provisions of Section 4100 4109 of the Public Contract Code of the State of California and any amendments thereto, the undersigned Bidder shall list below the name and business address of each subcontractor who will perform work under this Bid in excess of  $\frac{1}{2}$  of 1 percent of the Bidder's Total Bid Price, and shall also list the portion of the work which will be done by such subcontractor. After the opening of bids, no changes or substitutions will be allowed except as otherwise provided by law. The listing of more than one subcontractor for each item of work to be performed with the words "and/or" will not be permitted. Failure to comply with this requirement may render the Bid nonresponsive and may cause its rejection.

|   | Work to be Performed | Percent<br>of Total<br>Contract | License<br>Number &<br>Date of<br>Expiration | Subcontractor's<br>Name & Address |
|---|----------------------|---------------------------------|--|-----------------------------------|
| 1 | <hr/>                | <hr/>                           | <hr/>  | <hr/>                             |
|   |                      |                                 | <hr/>  | <hr/>                             |
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| 4 | <hr/>                | <hr/>                           | <hr/>  | <hr/>                             |
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| 5 | <hr/>                | <hr/>                           | <hr/>  | <hr/>                             |
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| 6 | <hr/>                | <hr/>                           | <hr/>  | <hr/>                             |
|   |                      |                                 | <hr/>  | <hr/>                             |
|   |                      |                                 |  | <hr/>                             |
| 7 | <hr/>                | <hr/>                           | <hr/>  | <hr/>                             |
|   |                      |                                 | <hr/>  | <hr/>                             |
|   |                      |                                 |  | <hr/>                             |

### **EQUIPMENT/MATERIAL SOURCE INFORMATION**

The undersigned, as Bidder, shall indicate opposite each item of equipment or material listed below, the name of the manufacturer of the equipment or material proposed to be furnished under the Bid. The listing of more than one manufacturer for each equipment/material to be furnished with the words "and/or" will not be permitted. Failure to comply with this requirement may render the Bid nonresponsive and may cause its rejection.

| <b>Equipment/Material</b> | <b>Manufacturer</b> |
|---------------------------|---------------------|
|                           |                     |
|                           |                     |
|                           |                     |
|                           |                     |
|                           |                     |
|                           |                     |
|                           |                     |
|                           |                     |
|                           |                     |
|                           |                     |

### **Listing of Construction Trades**

The Bidder anticipates that the following construction trades (carpenter, plumber, etc.) will be employed on this project:

|  |
|--|
|  |
|  |
|  |
|  |
|  |

I agree to complete all the work within \_\_\_\_ calendar days from the First Chargeable Day of the Contract as stated in the Notice to Begin Work and that in case I default in the execution of the required Contract, or in furnishing to the District the necessary bond, within the time fixed by the Law under which the call for Proposals is made, the proceeds of the check or bidder's bond accompanying this Proposal shall be forfeited and become the property of the Santa Clara Valley Water District.

I STATE AND CERTIFY THAT I HAVE READ AND UNDERSTOOD AND WILL COMPLY WITH EACH AND ALL OF THE REQUIREMENTS SPECIFIED IN THIS PROPOSAL FORM, AND I STATE UNDER PENALTY OF PERJURY THAT EACH AND ALL OF THE STATEMENTS I HAVE MADE ABOVE ARE TRUE TO THE BEST OF MY KNOWLEDGE.

Date:

Name and Address of Bidder:

Phone Number:

Signature of Person Authorized to Sign Bid:

Signer's Name and Title (Print):

Contractor's California License Number and  
Date of Expiration:

License Classifications:



**ATTACHMENT A**  
**LISTING OF BID ITEMS**

| Item No. | Description of Item                   | Approximate Quantity/Unit*  | Unit Price | Total |
|----------|---------------------------------------|-----------------------------|------------|-------|
| 1        | Storm Water Pollution Prevention Plan | Lump Sum                    |            |       |
| 2        | Mobilization                          | Lump Sum                    |            |       |
| 3        | Demolition, Clearing & Grubbing       | Lump Sum                    |            |       |
| 4        | Soil/Site Preparation                 | Lump Sum                    |            |       |
| 5        | NOA Mitigation Plans                  | Lump Sum                    |            |       |
| 6        | Imported Topsoil                      | <u>100</u><br>Cu. Yd.       |            |       |
| 7        | Irrigation Valves                     | <u>149</u><br>Each          |            |       |
| 8        | Irrigation Main Lines                 | <u>5,934</u><br>Linear Feet |            |       |

| Item No. | Description of Item        | Approximate Quantity/Unit*   | Unit Price | Total |
|----------|----------------------------|------------------------------|------------|-------|
| 9        | Irrigation Lateral Lines   | <u>36,377</u><br>Linear Feet |            |       |
| 10       | Irrigation Controller      | <u>1</u><br>Each             |            |       |
| 11       | Irrigation Bubblers        | <u>602</u><br>Each           |            |       |
| 12       | Irrigation Sprinkler Heads | <u>1,233</u><br>Each         |            |       |
| 13       | Traffic Control Monitoring | <u>300</u><br>Hours          |            |       |
| 14       | 2" Water Meters            | <u>2</u><br>Each             |            |       |
| 15       | Landscape Metal Screen     | <u>6,780</u><br>Sq. Ft.      |            |       |
| 16       | 1 Gallon Plant Materials   | <u>20,781</u><br>Each        |            |       |

| Item No. | Description of Item                   | Approximate Quantity/Unit* | Unit Price | Total |
|----------|---------------------------------------|----------------------------|------------|-------|
| 17       | 5 Gallon Plant Materials              | <u>2,427</u><br>Each       |            |       |
| 18       | 15 Gallon Shrub                       | <u>51</u><br>Each          |            |       |
| 19       | 15 Gallon Tree                        | <u>207</u><br>Each         |            |       |
| 20       | 24" Box Tree                          | <u>104</u><br>Each         |            |       |
| 21       | District Furnished Plant Installation | Lump Sum                   |            |       |
| 22       | Lawn Sod Installation                 | <u>222</u><br>Sq. Ft.      |            |       |
| 23       | Hydro-seeding                         | <u>222,858</u><br>Sq. Ft.  |            |       |
| 24       | Plant Establishment Maintenance       | <u>12</u><br>Months        |            |       |

| Item No. | Description of Item   | Approximate Quantity/Unit*  | Unit Price | Total |
|----------|---|-----------------------------|------------|-------|
| 25       | Gravel for Non Landscaped Areas                                 | <u>50</u><br>Cu.Yd.         |            |       |
| 26       | Metal Edging  | <u>2,852</u><br>Linear Feet |            |       |
| 27       | Mulch   | <u>2,466</u><br>Cu. Yd.     |            |       |
| 28       | Fascia Panels and Supports                                      | <u>4,000</u><br>Sq. Ft.     |            |       |
| 29       | Decorative CMU Walls and Trellises                              | <u>56</u><br>Linear Feet    |            |       |
| 30       | Guard House   | Lump Sum                    |            |       |
| 31       | Telecommunications System                                       | Lump Sum                    |            |       |
| 32       | Ornamental Metal Fence including Pilasters and Pedestrian Gates | <u>65</u><br>Linear Feet    |            |       |

| Item No. | Description of Item                           | Approximate Quantity/Unit* | Unit Price | Total |
|----------|---|----------------------------|------------|-------|
| 33       | Site Lighting                                 | Lump Sum                   |            |       |
| 34       | Front Vehicle Gate and Entry Gate Operator    | Lump Sum                   |            |       |
| 35       | Low Rail Fence                                | <u>950</u><br>Linear Feet  |            |       |
| 36       | Concrete Walkway & Steps                      | <u>282</u><br>Sq. Ft.      |            |       |
| 37       | Maintenance of Existing Landscaping to Remain | <u>10</u><br>Months        |            |       |
| 38       | Extra Work as Directed by the Engineer        | Lump Sum                   | \$250,000  |       |

\* These quantities are representative of the Work and are not to be used for estimating. It is the sole responsibility of the Contractor to establish the project requirements.

**END OF BID ITEMS**

**NONCOLLUSION AFFIDAVIT TO BE EXECUTED BY BIDDER AND  
SUBMITTED WITH BID**

**(Section 7106 California Public Contracts Code)**

\_\_\_\_\_ declares that he or she is \_\_\_\_\_ of

\_\_\_\_\_ the party making

the foregoing bid that the bid is not made in the interest of, or on behalf of, any disclosed person, partnership, company, association, organization, or corporation; that the bid is genuine and not collusive or sham; that the Bidder has not directly or indirectly induced or solicited any other bidder to put in a false or sham bid, and has not directly or indirectly colluded, conspired, connived, or agreed with any Bidder or anyone else to put in a sham bid, or that anyone shall refrain from bidding; that the Bidder has not in any manner, directly or indirectly, sought by agreement, communication, or conference with anyone to fix the bid price of the Bidder or any other bidder, or to fix any overhead, profit, or cost element of the bid price, or of that of any other bidder, or to secure any advantage against the public body awarding the contract of anyone interested in the proposed contract; that all statements contained in the bid are true; and, further, that the Bidder has not, directly or indirectly, submitted the bid price or any breakdown thereof, or the contents thereof, or divulged information or data relative thereto, or paid, and will not pay, any fee to any corporation, partnership, company association, organization, bid depository, or to any member or agent thereof to effectuate a collusive or sham bid.

I certify (or declare) under penalty of perjury under the laws of the State of California that the foregoing is true and correct.

\_\_\_\_\_  
(Date)

\_\_\_\_\_  
(Signature)

SANTA CLARA VALLEY WATER DISTRICT

**BIDDER'S BOND**

BE IT KNOWN BY THESE PRESENTS,

That we \_\_\_\_\_,  
\_\_\_\_\_, as PRINCIPAL, and  
\_\_\_\_\_

as SURETY, are held and firmly bound unto the Santa Clara Valley Water District, hereinafter called the District, in the penal sum of TEN PERCENT (10%) OF THE TOTAL AMOUNT OF THE PROPOSAL of the Principal above named, submitted by said Principal to the Santa Clara Valley Water District, for the work described below, for the payment of which sum is lawful money of the United States, well and truly to be made, we bind ourselves, our heirs, executors, administrators and successors, jointly and severally, firmly by these presents. In no case shall the liability of the surety hereunder exceed the sum of \$\_\_\_\_\_.

THE CONDITION OF THIS OBLIGATION IS SUCH,

That whereas the Principal has submitted the above mentioned Proposal to the District, for certain construction specifically described as follows, for which Proposals are to be opened at San Jose, California, on \_\_\_\_\_, 20\_\_\_\_, for \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

NOW, THEREFORE, if the aforesaid Principal is awarded the Contract and, within the time and manner required under the Specifications, after the prescribed forms are presented to him for signature, enters into a written contract, in the prescribed form, in accordance with the Proposal, and files the two bonds with the District, one to guarantee faithful performance and the other to guarantee payment for labor and materials, as required by law, then this obligation shall be null and void; otherwise, it shall be and remain in full force and virtue.

In the event suit is brought upon this bond by the obligee and judgment is recovered, the surety shall pay all costs incurred by the obligee in such suit, including a reasonable attorney's fee to be fixed by the court.

IN WITNESS WHEREOF, we have hereunto set our hands and seals on the \_\_\_\_\_  
day of \_\_\_\_\_, A.D., 20\_\_\_\_.

|             |             |
|-------------|-------------|
| _____(Seal) | _____(Seal) |
| _____(Seal) | _____(Seal) |
| _____(Seal) | _____(Seal) |
| Principal   | Surety      |

Address \_\_\_\_\_  
\_\_\_\_\_

NOTE: Signature of those executing for Surety must be properly acknowledged.



## **BIDDER'S GENERAL INFORMATION: INFORMATION REQUIRED OF BIDDER**

At the request of the District, the low Bidder shall furnish the following information within 2 working days of the request. Failure to comply with this requirement may render the Bid nonresponsive and may cause its rejection. Additional sheets may be attached as required.

1. Number of years as a contractor in construction work of this type: \_\_\_\_\_
2. Names and titles of all officers of Bidder's firm:  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
3. Name of person or persons who inspected site of proposed work for your firm:  
Name: \_\_\_\_\_ Date of Inspection: \_\_\_\_\_  
\_\_\_\_\_
4. Name, address, and telephone number of surety company and agent who will provide the required bonds on this contract:  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
5. The Bidder hereby declares that the Bidder has not been convicted, within the preceding 3 years, of any charge of fraud, bribery, collusion, conspiracy, or any other act in violation of any state or federal antitrust law in connection with the bidding upon, award of, or performance of any public work contract with any public entity. The term "bidder" is understood to include any partner, member, officer, director, responsible managing officer, or responsible managing employee thereof.
6. Has the Bidder, any officer of the Bidder, or any employee of the Bidder who has a proprietary interest in the Bidder, ever been disqualified, removed or otherwise prevented from bidding on, or completing a federal, state, or local government project because of a violation of law or a safety regulation?

Yes \_\_\_\_\_ No \_\_\_\_\_

If the answer is "yes," explain the circumstances in the following space:

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7. Attach to this Bid, as Enclosure A, the experience résumé of the person who will be designated as authorized representative.
8. On Enclosure B, list all construction contracts your organization has performed during the last 5 years giving the name of project; name, address, and telephone number of owner and engineer; contract amount, and date of completion.
9. Claims and Suits (If the answer to any of the questions below is yes, please attach details.)
- 9.1 Has your organization ever failed to complete any work awarded to it?  
Yes \_\_\_\_\_ No \_\_\_\_\_
- 9.2 Are there any judgments, claims, arbitration proceedings or suits pending or outstanding against your organization or its officers?  
Yes \_\_\_\_\_ No \_\_\_\_\_
- 9.3 Has your organization filed any lawsuits or requested arbitration with regard to construction contracts within the last 5 years?  
Yes \_\_\_\_\_ No \_\_\_\_\_
10. The Bidder signing for Contractor certifies that neither Bidder nor its principals is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this transaction by any federal department or agency.

**DISTRICT RESERVES THE RIGHT TO VERIFY THE ABOVE INFORMATION.**

I STATE UNDER PENALTY OF PERJURY THAT EACH AND ALL OF THE STATEMENTS I HAVE MADE ABOVE ARE TRUE TO THE BEST OF MY KNOWLEDGE.

Date:

Name and Address of Bidder:

Phone Number:

Signature of Person Authorized to Sign Bid:

Signer's Name and Title (Print):

Contractor's California License Number:

License Classification:

**Enclosure A**

**RESUME OF PERSON DESIGNATED AS AUTHORIZED  
REPRESENTATIVE**

## ENCLOSURE B

### Prior Construction Contracts

The Bidder may make as many copies of this page as necessary.

Address each item, indicating "none" where appropriate.

- A. Name, address, and telephone number of owner: \_\_\_\_\_
- B. Name of project: \_\_\_\_\_
- C. Location of project: \_\_\_\_\_
- D. Brief description of the work involved: \_\_\_\_\_  
\_\_\_\_\_
- E. Contract amount: \_\_\_\_\_
- F. Claims amount: \_\_\_\_\_
- G. Liquidated damages assessed: \_\_\_\_\_
- H. Date of completion of contract: \_\_\_\_\_
- I. Name, address, and telephone number of architect or engineer: \_\_\_\_\_  
\_\_\_\_\_
- J. Name of owner's project engineer: \_\_\_\_\_
- K. Declaration of Default: \_\_\_\_\_
- L. Litigation on questions of project performance: \_\_\_\_\_
- M. Determination of failure to pay prevailing wages or other state and/or federally required taxes or contributions: \_\_\_\_\_  
\_\_\_\_\_
- N. Citations by federal OSHA or CAL OSHA: \_\_\_\_\_  
\_\_\_\_\_

**District reserves the right to verify the above information**

**SMALL BUSINESS OUTREACH PROGRAM  
CONTRACT COMPLIANCE REQUIREMENTS**

# Small Business Outreach Program

## Instructions and Compliance Documents

### PART I: GENERAL

- A. To be eligible for award of this Contract, each bidder must agree to comply with the following requirements.
- B. This Part, together with the Small Business Outreach (SBO) participation goals, will comprise the SBO Program Contract Compliance requirements which will be incorporated into the Contract.
- C. For the purposes of this Contract, whenever the following terms are used the intent and meaning shall be interpreted as follows:
  - 1. **Contractor**—Unless otherwise indicated in the text, shall include and refer to the prime or general contractor, subcontractor and sub-subcontractor and suppliers.
  - 2. **Contract Base Bid Amount**—Contract Amount excluding the Extra Work Bid Item.
  - 3. **District**—The Santa Clara Valley Water District.
  - 4. **Small Business**—Predefined under Government Code 14837 and includes Micro Business under that definition, as follows:
    - a. A "Small Business" means an independently owned and operated business that is not dominant in its field of operation, the principal office of which is located in California, the officers of which are domiciled in California, and that, together with affiliates, has 100 or fewer employees, and average annual gross of ten million dollars (\$10,000,000) or less over the last previous three years.
    - b. A "Micro Business" is a small business that, together with affiliates, has 25 or fewer employees and average annual gross receipts of two million five hundred thousand dollars (\$2,500,000) or less over the previous three years.
- D. In order to be eligible for award of contracts, each bidder, subcontractor and the affected small business shall complete the appropriate forms as identified below. The prime contractor will be responsible for submitting all applicable forms to the District. Unless indicated otherwise, all applicable forms shall be submitted with the bid proposal.

For purposes of evaluating small business preference, only the contract base bid amount will be counted toward meeting the minimum goal. This amount must be properly indicated in the forms submitted and will be verified by the District's Human Resources Unit Manager.

1. **For the bidder (as potential prime Contractor):**

- a. ***Designation of Subcontractors List*** (Contained in the Bid Proposal Form, Page 2 of 4)

When small or micro businesses are to be used as subcontractors and their contract amount is in excess of ½ of 1 percent of the base bid, they must be designated on the subcontractors list with each subcontract amount indicated consistent with State fair subcontracting regulations. Such firms shall be designated with "SB" (when applicable) after their name.

- b. ***Attachment 1*** (Page 1)

All bidders shall indicate the small business participation amount, complete this form and submit it with the bid.

(If the bidder is a small business when applicable, by itself or through joint venturing, indicate "SB" after the firm's name.)

- c. ***Attachment 2, Affidavit*** (Page 2)

- (1) When small businesses are to be used as sub-subcontractors, suppliers, or service agents, Attachment 2 (Affidavit) shall be completed.
- (2) To confirm and identify the use of small business, the bidder shall submit a completed Attachment 2 (Affidavit).

2. **For the Certified Small/Micro Business:**

Provide a copy of the Department of General Services letter which certifies that you or your subcontractors are a "Small/Micro Business."

3. **For Joint Ventures:**

Joint Ventures formed at either prime contractor level or subcontractor level must submit a Joint Venture Management Plan (a Joint Venture Agreement will be acceptable if it includes the provisions of Section B, Part III of this document). (Note: Joint Ventures formed at the prime contractor level are subject to the requirements of Article 3.08 of these Specifications.)

**PART II: SMALL BUSINESS PREFERENCE PROCEDURES**

- A. The prospective prime contractor shall complete Attachment 1, Attachment 2, Attachment 3 and submit it with his/her bid as acknowledgement of the Small Business Outreach Program.
- B. The District procedures will provide for a 5 percent preference for qualified small businesses including micro businesses. The preference for non-small business meeting

subcontracting goals will be 3 percent for a minimum of 30 percent participation by small businesses, 4 percent for a minimum 40 percent participation by small businesses and a maximum of 5 percent for a minimum 50 percent participation by small businesses.

- C. The priority for applying the preference will be in the following order:
1. Micro Business in highest ranked order.
  2. Small Business in highest ranked order.
  3. Non-Small Business, subcontracting with the highest percent of micro business in highest ranked order.
  4. Non-Small Business subcontracting with the highest percent of small business in highest ranked order.
  5. In the event of a tie, the award will be given to the local business (defined as having its principal office/headquarters within Santa Clara County).

Only one firm will receive the preference at one time for purposes of determining the highest ranked proposal for award. If after applying the preference, that firm is not ranked the highest, the preference will be given to the next qualifying firm in the priority order listed. In the event of a tie, the award will be given to the local business (defined as having its principal office/headquarters within Santa Clara County).

### **PART III: SATISFACTION OF SMALL BUSINESS REQUIREMENTS (Good Faith Effort)**

- A. No substitution of a small business subcontractor shall be made at any time without the written consent of the District. If a small business subcontractor is unable to perform successfully and is to be replaced, the contractor will be required to make good faith efforts to replace the original small business subcontractor with another small business subcontractor.

Bidders must demonstrate a good faith effort to meet the goals set forth in this contract and shall be prepared to submit documentation demonstrating that a good faith effort was made. For further information and/or assistance, contact the Santa Clara Valley Water District's Human Resources Unit Manager at (408) 265-2607, extension 2714. All documentation will be specific with names, addresses, phone numbers, dates, etc., to demonstrate that the bidder made a reasonable effort to obtain small business participation. Documentation shall include, but not be limited to, the following information:

1. Any prebid meeting or semiannual workshop specifically designed and conducted by the contractor to cover his/her small business program requirements and regulations and held within the last previous six (6) calendar months prior to the bid opening.
2. Listing in general circulation media, trade association publications, minority Chamber of Commerce and minority/women focus media requesting specific subbids at least two weeks before bid proposals are due.



3. Letters or records documenting that the bidder contacted a reasonable number of specific small businesses to solicit interest for a specific portion(s) of the Contract in sufficient time to allow the small businesses to participate in work which is to be performed by other than the prime contractor. This documentation should reflect the intent to comply with the participation contract goals established for this contract.

Verbal solicitations will be accepted, provided they are followed by a letter of understanding to the small business firm. This letter will reiterate the offer to bid and be specific as to names, scope of work, etc.

4. Efforts made to select portions of the work proposed to be performed by small businesses in order to increase the likelihood of achieving the contract goals (including, where appropriate, breaking down contracts into economically feasible units to facilitate small business participation).
5. Efforts made to provide interested small businesses with adequate information about the plans, specifications, and requirements of the Contract.
6. Efforts made to negotiate in good faith with interested small businesses not rejecting small businesses as unqualified without sound reasons based on a thorough investigation of their capabilities, including a list of all small business subbids which were received but not used. This list shall include, at a minimum: (a) the names, addresses and telephone numbers of small businesses that were contacted; (b) a description of the information provided to small businesses regarding the plans and specifications for portions of the work to be performed; and (c) a statement giving reasons for the rejection.
7. Efforts made to assist interested small businesses in locating bonding, lines of credit, or insurance. This may include referral to local agencies specifically set up for this purpose.
8. **Small business Good Faith Effort Certification, Attachment 3**, to be submitted with the bid.
9. Good Faith Effort Documentation must be submitted within 2 days of the Bid Opening.

- B. A Management Plan for a joint venture's project activity shall be submitted in accordance with the time limits set under Part I, Section D. The joint venture Management Plan must be clear and specific and shall include, but not be limited to, the following:

1. Identify the financial contributions of each partner.
2. List personnel and equipment used by each partner.
3. A detailed breakdown of the responsibility of each partner.
4. Explain how the profits and losses shall be distributed.

The Management Plan shall be subject to District approval.

- C. Should for any reason the contract be, or be contemplated to be awarded to other than the apparent low bidder, the new apparent low bidder shall submit Good Faith Effort documentation, as necessary, within the time limit set by the District.

- D. Any bid proposal that does not list small businesses as required herein, and either fails to or does not make a commitment to the small business requirements established by these Contract Documents will be considered nonresponsive, unless the bid is accompanied by compelling documentation setting forth why the goal cannot be met. This documentation will be subject to District review and will be interpreted narrowly.

On request by the District, the bidder shall permit access to all records that may be pertinent to small business participation for the project. Such information will be safeguarded.

The determination of whether a bidder has met the above stated requirements shall be made by the District's Human Resources Unit Manager prior to award of the Contract.

- E. Ms. Estela Tarano is the Santa Clara Valley Water District's Human Resources Unit Manager. For information or assistance, please contact her at (408) 265-2607, extension 2714.

## Small Business Outreach Program

### ATTACHMENT 1

- A. The undersigned bidder and its subcontractors hereby agree to comply with the District Small Business Outreach program.
- B. In compliance with the Small Business Outreach Program, the undersigned bidder or subcontractor hereby undertakes, as a goal and when applicable, to commit \$ \_\_\_\_\_ or \_\_\_\_\_ percent of the total base bid work to be contracted or supplied on this contract by small or micro-owned firms(s). Should the undersigned bidder fail to state the required dollar or the percentage amount in the spaces provided above, nevertheless by affixing its signatures below the bidder agrees to comply with the minimum goal as outlined under Part II on a timely basis.

\_\_\_\_\_  
Firm, Partnership or Joint Venture  
(please print)

\_\_\_\_\_  
By:  
Authorized Representative  
(signature)

\_\_\_\_\_  
Name & Title of Authorized Representative  
(please print)

\_\_\_\_\_  
Address

\_\_\_\_\_  
Telephone

# Small Business Outreach Program

## ATTACHMENT 2

### AFFIDAVIT

(To be completed by the prospective prime contractor, general contractor or subcontractor as appropriate)

State of California

County of \_\_\_\_\_, Being duly sworn, deposes and says:

That contingent upon award of \_\_\_\_\_  
(Name and Title)  
\_\_\_\_\_ (Name of Project)  
\_\_\_\_\_ (Name of Contractor) will award subcontracts or purchase  
orders to the following small/micro firms: (If the firm is a joint venture, attach a copy of the joint  
venture agreement.)

|    | Name and Address        | Lic. # | Yrs.<br>in<br>Bus. | Type<br>of<br>Work | Amount<br>of<br>Subcontract |
|----|-------------------------|--------|--------------------|--------------------|-----------------------------|
| 1. | _____<br>_____<br>_____ | _____  | _____              | _____              | _____                       |
| 2. | _____<br>_____<br>_____ | _____  | _____              | _____              | _____                       |
| 3. | _____<br>_____<br>_____ | _____  | _____              | _____              | _____                       |
| 4. | _____<br>_____<br>_____ | _____  | _____              | _____              | _____                       |
| 5. | _____<br>_____<br>_____ | _____  | _____              | _____              | _____                       |

I declare, under penalty of perjury, that the above information is true and correct.

Notary Public

Subscribed and sworn before me

on this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_

Seal:

January 26, 2005

Owner or Authorized Representative (Signature)

Name & Title (please print)

Address

Telephone: \_\_\_\_\_

## Small Business Outreach Program

### ATTACHMENT 3

#### SMALL BUSINESS OUTREACH GOOD FAITH EFFORT CERTIFICATION

The following affirmative steps are required:

1. Including qualified small/micro businesses on solicitation lists.
2. Assuring that small/micro businesses are solicited, whenever they are potential sources.
3. Dividing total requirements when economically feasible, into small tasks or quantities to permit maximum participation of small/micro businesses.
4. Establishing delivery schedules, where the requirements of the work permit, which will encourage participation by small/micro businesses.
5. Using the services and assistance of the Small Business Administration and the California Department of General Services.

I hereby certify the above,

\_\_\_\_\_  
Name of Prime Contractor

\_\_\_\_\_  
Signature of Authorized Representative

\_\_\_\_\_  
Date

\_\_\_\_\_  
Name and Title of Authorized Representative

RESOLUTION NO. 88 - 11

ADOPTING GUIDELINES FOR USE OF THE TERM  
"RESPONSIBLE BIDDER"

WHEREAS, applicable law requires that public construction contracts shall be awarded to the lowest responsible bidder but the term "responsible bidder" is not defined; and

WHEREAS, to insure that in the awarding of construction contracts, treatment of bidders shall be equitable, uniform and fair, a definition of that term should be adopted; now, therefore,

BE IT RESOLVED by the Board of Directors of Santa Clara Valley Water District that a contractor, to be deemed a responsible and responsive bidder, shall complete the proposal form and meet the following criteria:

1. The contractor must possess a valid California State Contractor License, applicable to the work to be performed and have or to be capable of obtaining the work force and equipment required for the work.
2. At the time of bid opening, the contractor must submit a bidders bond, otherwise known as bid security, through a bond, certified check or cash in an amount equal to at least 10% of the bid.
3. The contractor must have the ability to obtain payment and performance bonds and insurance as specified in the contract documents.
4. The contractor must list all subcontractors in the bid proposal in accordance with the California Subcontracting Act.
5. The contractor must comply or must show good faith efforts to comply with all applicable Affirmative Action requirements.
6. In case of grant funding, the contractor must meet all applicable requirements specified in the grant.
7. The contractor must have or have the ability to obtain any necessary local business license.
8. The contractor must not present a bid proposal in collusion with any other bidder or bidders.
9. The contractor must not show a pattern or consistent history of having been assessed liquidated damages; or of having been declared in default on construction contracts; or of having been in litigation on questions of project performance; or of having failed to pay prevailing wages or other state and/or federally required taxes or contributions; or of having violated established safety practices.

Resolution Adopting Guidelines for Use of the Term "Responsible Bidder"

PASSED AND ADOPTED by the Board of Directors of Santa Clara Valley Water District  
on this 23rd day of February, 1988, by the following vote:

AYES: Directors J. DONOHUE P. T. FERRARO R. W. GROSS J. JUDGE  
J. J. LENIHAN J. PANDIT S. SANCHEZ

NOES: Directors None

ABSENT: Directors None

SANTA CLARA VALLEY WATER DISTRICT

/S/ JOE PANDIT

By: \_\_\_\_\_  
Chairman of the Board of Directors

ATTEST: SUSAN A. PINO

/S/ SUSAN A. PINO

\_\_\_\_\_  
Clerk of the Board of Directors